

Scientific Session I

Thursday, August 29, 1996

10:30 a.m. to 12:30 p.m.

1

Pheochromocytoma and Asymptomatic Medullary Cancer of the Thyroid in a Young Male: A Case of Multiple Endocrine Neoplasia, Type 11

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Pheochromocytoma is an uncommon cause of hypertension. However, in each case of pheochromocytoma, other endocrine neoplasia should be looked for.

A 36-year-old white male with a 2-year history of labile hypertension presented with accelerated hypertension of 210/130 and intermittent left-sided weakness. Pheochromocytoma was suspected and confirmed chemically and by a CT scan of the adrenals. His VMA was 37.4 (N=6). Total plasma catecholamine was 3,493 (N=115); epinephrine, 1,894 (N=25); and norepinephrine, 1,599 (N=115). He had no goiter or thyroid nodule, but serum calcitonin was reported to be 6,400 (N=425). After calcium infusion, the calcitonin was 9,400. A thyroid scan showed a cold nodule in each lobe.

After blocking with Dibenzylamine 20 mg daily, he underwent left adrenalectomy for pheochromocytoma. This normalized his blood pressure, and he was released on no medication. Two weeks later, he was readmitted for total thyroidectomy and lymph node dissection. He also was given a course of external radiation to the neck and mediastinum. Subsequently, he has done well on Synthroid, calcium, and Vitamin D. His last B/P was 120/80; VMA, 2.1; and calcitonin, 98. A brief view of multiple endocrine neoplasia also is given.

2

Transmyocardial Laser Revascularization of the Heart

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*William Angell, MD****

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This paper will examine the indications, applications and outcomes of this new procedure to revascularize the

myocardium. Our institution is part of a multicentric trial to evaluate the use of the Holmium laser in this procedure. Phase one of the trial, experiments on dogs, is completed. Phase two now has started. Our first two clinical cases have been accomplished successfully. By the time of presentations, additional cases will have been accomplished. Results of this initial experience will be presented.

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3

Transmyocardial Laser Revascularization: Evaluation of Channel Arborization as a Future Treatment Modality in Fox Hounds

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The use of transmyocardial laser revascularization in patients being evaluated for heart transplantation has the potential benefit of providing staged palliation for suboptimal selected recipients or as a definitive alternative therapy. To evaluate channel development and arborization in normal myocardium, pulsed laser channels were imprinted into the left ventricular myocardium of 10 fox hounds (weight between 15-30 kg) at thoracotomy, using a pulsed Holmium laser source (Eclipse TMR, Sunnyvale, California) to apply a nondegrading 2-micron thermal tract at 5 pulses per second to four adjacent square grids on the left ventricular surface. Sixteen channels were collectively imprinted using 192 pulses (mean 12 pulses per channel) at variable watt signal strengths 2, 4, 6, 8, and 14 watts (dogs 1-8) and at 8 watts (dogs 9 and 10) without producing hemorrhagic shock, ventricular tachycardia, or fibrillation. Subgroup postmortem analyses by M&E staining of the left ventricular block sections were performed on day 1, and at 2, 4, and 6 weeks.

Results: 1) Channel formation was missing in all but one dog at 2 watts, but equally developed at 4, 6, and 8 watts. Excessive charring was identified in one dog at one block square at 4 watts and in all channels examined at 14 watts. 2) Channel arborization was not identified in any channel, but each showed intense neovascularization and fibrous response, most marked in channels imprinted at 10

and 14 watts. 3) No hemorrhagic bruising or endoepicardial infarction changes were identified with this technique. The Eclipse TMR used at 8 watts provides a safe, controlled channel imprint. The lack of arborization and intensity of fibrous response in this study may reflect a vital response by normal myocardium that differs from that exhibited by end stage cardiac failure or the irreversible development of ventricular fibrosis seen in ischemic cardiomyopathies.

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Tramadol for Obstetric Analgesia: Comparison with Meperidine

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Objective: As tramadol has been claimed to be free from respiratory depression, this study was conducted to evaluate it for obstetric analgesia.

Methods: This prospective study comprised 200 primigravidae parturients. Fifty each in groups A, B, C, and D. Group A comprised those who refused analgesia and served as controls. Groups B, C, and D received meperidine 1 mg/kg I.M., tramadol 1 mg/kg i.m., and tramadol 1 mg/kg I.V. respectively, at the onset of active labor. Patients in all groups were monitored regularly for pulse, blood pressure, respiratory rate, uterine contractions (duration and interval), fetal heart rate, and PV examination. Apgar scores were noted at 1, 5, and 10 minutes after birth.

Results: Pain relief was satisfactory in 72% (Group B), 48% (Group C), and 90% (Group D) at 15 minutes and in 94% (Group B), 56% (Group C), and 92% (Group D) at 30 minutes. The duration of labor was dramatically reduced to less than 3 hours in the I.V. tramadol group. Neonatal Apgar score at 1 minute was 7 or more in all the groups except a score of 5-6 in 8%, 10%, 10%, and 8% of those in Groups A, B, C, D, respectively, which was an insignificant difference between any of the groups. Apgar score was above 7 in all the groups at subsequent observations at 5 and 10 minutes. No untoward effects were observed.

Conclusion: Satisfactory pain relief of labor was achieved with both I.M. meperidine and I.V. tramadol, without any untoward effects. Intravenous tramadol has the added advantage of dramatically hastening the labor, and thus, reducing the exhaustion of parturition.



Ritual Clitoridectomy and its Base and Baseless Associating by Media with Islam

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Purpose: Commenting on the female circumcision, referred to as the genital mutilation of women in the popular press, Collee Kapklien says in a recent issue of the *New Physician*, published by the American Medical Student Association, that "the reason for the practice's endurance include[s] Islam..." The concern for the anti-Islamic effects of such an erroneous and prejudicial statement in a medical publication directed at the medical students could have on the would-be physicians in the United States prompted a historical review of the subject, particularly from an Islamic perspective.

Materials and Methods: A review of the available historical, medical, and religious literature, some dating to the 12th century, and interviews with some of today's Islamic scholars were conducted to put this subject in proper perspective, specifically concerning Islam and Muslims.

Results: In all sources consulted, none confirmed or even suggested that ritual clitoridectomy was a required or accepted practice in Islam. The female circumcision was practiced by the ancient Egyptians and nations centuries before the appearance of Islam. In at least one source from the 12th century, it was found that the forefathers of the Jews may also have practiced.

Conclusions: Although therapeutic clitoridectomy for tumors was described in the 10th century by Aboo-al-Qaasim Zahraawi (CE 936-1013), there is not the slightest indication that ritual clitoridectomy (female circumcision) was part of Islamic teachings or practices. The Muslims, particularly those living in the West, need to be aware of this to effectively right the fallacious propaganda that goes on to distort the public's view of Islam.



Taxol Blocks Processes Essential for the Metastasis of Prostatic Cancer

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Taxol, an alkaloid from Japanese and Pacific yew, is a potent drug with tremendous potential in the treatment of a wide range of cancers, including prostate. Taxol forms ab-

normally stable microtubules, which results in the inhibition of the normal reorganization of the microtubule network that is essential for interphase and mitotic cellular functions.

We studied the antimetastatic effects of taxol on two processes, namely proliferation and chemoinvasion in cells from primary and secondary tumors of R3327-AT3 adenocarcinoma of the prostate and on peripheral blood lymphocytes (PBL) from patients with confirmed histological diagnosis of advanced prostatic cancer. Our data, based on a nonradioactive cell proliferation assay utilizing MTT (3-[4,5dimethylthiazol-2-yl]-2,5-diphenyl tetrazolium bromide), showed that taxol at a low dose of 5 µg/ml had an antiproliferative effect both on primary and secondary R3327-AT3 tumor cells. Taxol also had an antiproliferative effect on PBL from patients with prostatic cancer; but the difference between taxol-treated versus untreated PBL was not significant. In evaluating the anti-invasive effects of taxol, using Transwell invasion chambers coated with Matrigel (reconstituted basement membrane), we observed that AT3 tumor cells pretreated with taxol were less invasive in nature compared to untreated control tumor cells. Studies are in progress to evaluate the in vivo effect of taxol on processes that lead to the dissemination of tumor cells and assist in the metastatic cascade of prostatic cancer.



The Second Generation of Intracoronary Stents

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There are more than 450,000 percutaneous transluminal coronary interventions being performed per year in the United States with nearly 50% of these procedures utilizing one or more intracoronary stents. Since the FDA's approval of Gianturco-Rubin stent for acute or threatened closure in 1993 and Planu-Scatz stent for de Novo coronary lesions in 1994, coronary stents have become widely accepted as a standard coronary revascularization modality. Stents provide a mechanical scaffold with a larger acute gain of the coronary diameter, a higher procedural success and improved technical feasibility with lesser restenosis rate as compared to balloon angioplasty. However, this gain is achieved in exchange for permanently implanted metallic tubes or coils that are thrombogenic and may jeopardize future interventions such as coronary bypass graft surgery (CABG). Despite the lack of long-term (>10 years) outcome of coronary stenting, there are more than 20 types of coronary stents currently being utilized worldwide.

The results of two randomized trials, STRESS and BENESTENT, with improvement in lowering restenosis rate, the technological developments in support systems, high-pressure balloon inflations, adjunct Intravascular Ultrasound (IVUS) guidance, and modern antiplatelet therapy with little

or no anticoagulation after the procedure are some of the major milestones in this rapidly changing field of interventional cardiology. There are ongoing randomized trials to assess the restenosis rate with the heparin-coated stents (BENESTENT II), radiation stents, and some of the newer stents. It is becoming quite clear that an ideal stent for every coronary lesion may not be a practical reality in the near future. However, with increasing knowledge from randomized trials, high volume clinical center registries, and increasing operator experience, a lesion-specific coronary intervention (balloon angioplasty, stent, or atherectomy) is an acceptable growing trend with a greater procedural success, a lesser complication profile, and a better longterm outcome with decreased restenosis.



Conservative Management of Preterm Premature Rupture of Membranes

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Objectives: Evaluation of the effectiveness of a PPROM protocol.

Study methods: 56 patients with PPROM managed by a perinatologist in a private tertiary hospital. Patients with active labor or clinical chorioamnionitis were excluded. The protocol consisted of bed rest, cervical cultures, antibiotics, tocolysis if needed, monitoring with CBC, CRP, NSTs, BPPs. Labor was induced for fetal indications or chorioamnionitis.

Results: Median GA was 30.9 w on admission and 32.0 w at delivery. Median latency period was 4 d. 15 patients had NSTs. 54 patients had BPPs. 14 patients received tocolytics (median 3 d). 42 patients received antibiotics (median 7 d). 18 patients developed chorioamnionitis 11 patients were induced. 14 patients were delivered by C-Section. There were no stillbirths. There were 3 neonatal deaths. The corrected PNMR was 1.75%. Median neonatal hospital stay was 15.5 d.

Conclusion: This protocol resulted in an excellent perinatal outcome. BPPs and CRPs allow the physician to continue conservative management.

Scientific Session II

Thursday, August 29, 1996

2:30 p.m. to 4:30 p.m.



Successful Introduction of Islam and Medicine Course into the Ohio State University, College of Medicine, Behavioral Science Program

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"Islam and Medicine" was successfully introduced as an ongoing course at the College of Medicine, the Ohio State University, in the medical humanities and behavioral sciences mini-module (4 weeks, 3 hours a week) format, for first-year medical students. The goal was to develop cultural awareness, knowledge, and sensitivity in the management of Muslim patients.

Subjects presented included the definition of Islam, pillars of Islam, moral and ethical values, Islamic culture, Islam and science, Islamic law, medical ethics, and principles in the management of Muslim patients. Lectures, slides, hand-outs, and videos formed the modes of presentation that ensued lively discussions. The course was well received by the students providing sufficient impetus to physicians and other professionals to offer similar presentations in their institutions, including universities, hospitals, and schools, to increase knowledge of an increasing Muslim population in the United States.



Distal Dorsal Forearm Flap

*Khalique S. Zahir, MD; Syed Ahmed, MD, PhD;
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Significance: The axial pattern flaps available for reconstruction of dorsal soft tissue defects of the hand are the distally based posterior interosseous artery (PIA) flap and the distally based radial artery (RA) forearm flap. The unreliable blood supply of the PIA flap and the need to sacrifice one of the major arteries to the hand during elevation of the RA flap have prompted the search for a reliable axial flap for dorsal hand coverage that does not sacrifice a major blood supply to the hand.

Purpose: The goal of this study was to investigate the vascular supply of the distal dorsal forearm and the feasibility of using a local skin flap based on perforating vessels to reconstruct the dorsal aspect of the hand.

Methods: Thirty adult cadaveral hands were injected

with Microfil and dissected to determine the distal forearm anatomy. Five cadaveral hands were injected with radio-opaque barium sulfate, following which the skin and fascia were removed and radiographed. In five hands, India ink was injected into cutaneous vessels to determine the vascular territories of these perforators. In another six hands, the flap was elevated and rotated to demonstrate potential hand defect coverage.

Results: The results of these investigations indicate that a new flap can be designed, based on a cutaneous branch of the anterior interosseous artery (AIA). The AIA runs along the volar surface of the anterior interosseous membrane. One centimeter proximal to the pronator quadratus muscle (5.5 cm proximal to the radial styloid process) it gives off a proximal dorsal cutaneous branch (PDCB), which pierces the interosseous membrane and supplies the skin of the distal third of the forearm. The average artery diameter at the origin of the PDCB was 0.7 mm (SEM = 0.1). The mean pedicle length was 3 cm in length (SEM = 0.25). Based on dye injection studies, the flap can be made as large as 5 by 10 cm. Small donor sites can be closed directly, whereas larger donor sites may require the use of random skin flaps or skin grafts for closure.

Conclusions: A pedicle flap based on this septocutaneous perforator is useful for distal forearm coverage. A distal anastomosis between the PDCB and the radial artery allows this flap to be based distally for dorsal hand reconstruction. Proximal dissection of the AIA to its origin allows for the creation of a pedicle or free flap with a larger vessel diameter once the interosseous membrane is divided. These applications demonstrate the versatility of this newly designed flap.



Euthanasia and Physician-Assisted Suicide: An Islamic Perspective

Shahid Athar, MD, FACE

Medical Ethics Chair
Islamic Medical Association

With the advancement of medical technology and the rising cost of care of terminally and hopelessly ill patients, new questions and issues are being raised in the areas of artificial life support, brain death, euthanasia, and assisted suicide. To date, one physician in Michigan has assisted in 27 cases of suicide of such patients.

In April 1996, the Institute of Medicine (IOM) requested written testimony from the Islamic Medical Association (IMA) and several other organizations to address these problems hoping to develop national guidelines on the end-of-life issues.

IMA has told IOM that it is opposed to both euthanasia and physician-assisted suicide. Details of IMA testimony, rationale, and suggestions are discussed.

12**Informed Consent in Elderly***M. Basheer Ahmed, MD*

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The elderly population in United States is gradually increasing. Today, 30 million of the U.S. population is over the age of 50. In the next 50 years, it is estimated that 21% of the population or approximately 70 million people in the U.S. will be over 65 years old. Physicians need to develop an understanding of the unique problems of getting informed consent in the aging population. With informed consent, a patient must understand the need for proposed treatment and consequences of refusing such a treatment. The minimum standard is that the patient must acknowledge that the diagnosis has been made and that he has to make a judgment about accepting or refusing the treatment offered. Under these minimum standards, a patient who may be in an early stage of dementia or psychosis still can be found competent to consent for the treatment. Therefore, a decision-making capacity must be fully determined. The presentation will outline the difference between incompetence and incapacitated. A detailed description of the durable power of attorney for financial matters, for health care, and a living will, will be presented. The selection of surrogate decisionmaker for the health care and surrogate decisionmaker for withholding and withdrawing life sustaining measures also will be presented.

13**Cerebral Arterio-Venous Malformations: Clinical and Research Prospectives***Ghaus M. Malik, MD and Saleen I. Abdultauf, MD*

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Intracranial cerebral arterio-venous malformations (AVMs) are congenital lesions composed of abnormal vessels that can lead to hemorrhage with considerable risk of morbidity and mortality. AVMs occur sporadically in the population and no genetic link yet has been identified. In this presentation, we will discuss the principles of clinical management of cerebral AVMs and our laboratory research efforts aimed at identifying the genetic predisposition to the development of AVMs.

Patient factors (age, clinical status) and lesion factors (size, location, flow pattern) will be discussed as part of a wide paradigm in the clinical decision-making process.

In the past 20 years, we have managed approximately 400 cerebral AVMs. Among this population, 11 families were identified in which more than one family member was

affected. Two of the affected families also had hereditary hemorrhagic telangiectasi (HHT), which, also is composed of lesions with abnormal vessel formation that occurs systemically. The gene responsible for HHT recently has been identified. The gene products are proteins involved in the angiogenic interactions of transforming growth factor beta, which is involved in the formation of new vessels walls. We will present data to show the expression of this and other vascular growth factors in cerebral AVMs based on immunohistochemical techniques. Furthermore, we will discuss our ongoing molecular biology experiments to look at specific loci on chromosomes 9 and 12 in patients with familial AVMs using polymerase chain reaction techniques in the aim to elucidate abnormalities at these locations that may explain the defect responsible for AVM formation.

14**Isolated Type A Interruption of Aortic Arch: A Case Report with Review of Clinical, Angiographic, and Pathophysiologic Features**

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Isolated interruption of the aortic arch is an exceedingly rare congenital anomaly in which interruption is a solitary lesion not accompanied by supra- or intracardiac shunts. An association with male Turner's syndrome has been described. Only eight cases have been reviewed in literature. In contrast to aortic interruption associated with cardiac anomalies, the clinical course is relatively benign and survival into adult life is not uncommon. This is believed to be due to the formation of effective collateral supply during fetal life and early postnatal life.

A 21-year-old male patient presented with symptoms of easy fatigability, headaches, progressive intermittent claudication, and paraesthesia in his legs. Femoral pulses were absent bilaterally but the proximal pulses were bounding with hypertension. Cardiac examination was otherwise normal. Transesophageal echocardiographic scanning of doppler flow velocities in the descending thoracic aorta revealed an abrupt signal cutoff. The only intracardiac abnormality was a bicuspid aortic valve. Two separate angiograms done via brachial and right femoral arterial injections revealed type "A" solitary aortic interruption at the level of the left subclavian artery and extensive collateralization along the mammaries and intercostals providing blood supply to lower extremities.

This case is unique in that no other cardiac anomaly was detected. Clinical and angiographic recognition of this lesion

is important because operative intervention has been successful in an increasing number of patients.

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Hydroxyl Radical Scavenging Effect of Nicaraven: 1,2-bis(Nicotinamide)-Propane in Myocardial and Coronary Vascular Preservation-Reperfusion Injury

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Reperfusion after global cardiac ischemia may lead to the generation of the most culprit, highly reactive hydroxyl radical (-OH), which is the mediator of myocardial stunning, coronary vascular damage, and no-reflow. In this study, we investigated the efficacy of a new agent, Nicaraven, Hydroxyl radical scavenger, in reducing myocardial as well as coronary vascular preservation-reperfusion (P/R) injury. Isolated rat hearts were mounted on a Langendorff (L) apparatus to estimate the baseline cardiac function. They were divided into two groups: Group 1, 12-hour storage in histidine-tryptophane-ketoglutarate (HTK) solution. Group 2, 12-hour storage in HTK solution containing 10^{-3} M Nicaraven. Hearts in all groups were stored at 4°C and then reperfused. Post-preservative cardiac function and concentrations of leaked enzymes were measured. The hearts were switched back to L-mode and paced at 330 beats/min. The coronary flow following perfusion with Krebs-Henseleit bicarbonate buffer (KHB) solution containing 10^{-6} M 5-hydroxytryptamine (5-HT) or (10^{-5} M nitroglycerine (NTG) was expressed as a percentage of that perfused with drug-free KHB solution in each group. The recovery of aortic flow, coronary flow, cardiac output, systolic pressure, aortic mean pressure, double product, and left ventricle dp/dt was significantly greater in Group 2 ($P < 0.05$) than in Group 1. 5-HT caused a decrease in coronary flow in each group; however, Group 2 was higher ($P < 0.05$). NTG caused no significant differences between the groups. There were no significant differences in leaked enzymes and myocardial water content between the two groups. These results hypothesize that Nicaraven administration during preservation may protect against myocardial and coronary vascular P/R injury.

To test this hypothesis, we developed an in vitro model of reperfusion injury in which segments of epicardial pig

coronary artery were suspended in organ chambers (Kreb's Ringer solution, 37°C 95% O_2 , 5% CO_2 , pH 7.4) and exposed to -OH (generated by adding $FeSO_4$, 28m M/L and H_2O_2 , 28m M/L to the bathing solution for 60 minutes). The vasodilator bradykinin (BK) was given after $FeSO_4/H_2O_2$ was removed from the organ chamber. The earlier $FeSO_4/H_2O_2$ exposure produced an attenuation of the endothelium-dependent relaxation (as reflected by increased ED_{50} values) of the rings induced by BK (10^{-10} M/L - 10^{-7} M/L) as compared with the reaction of the control vessels not exposed to -OH ($n=6$, $p < 0.001$; $n=9$, $p < 0.001$; $n=5$, $P < 0.02$, respectively). The earlier Nicaraven (10-4 M/L - 10-5 M/L) plus -OH-exposure group showed significant protection, of endothelium-dependent relaxation as compared with the -OH injury group ($n=6$, $p < 0.02$; $n=9$, $P < 0.01$, respectively). These results prove the -OH scavenging effect of Nicaraven.

Taken together, the results of both rat whole heart and pig coronary artery indicate that Nicaraven administration not only during preservation but also during reperfusion may improve coronary vascular and cardiac function by its hydroxyl radical scavenging activity.

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Profitable Practice Strategy Under Managed Care

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During the past 10 years, there has been a staggering growth of managed care in this country. Even though the concept of managed care has been around for a long time, American medicine has been forced into it in the recent past due to the demand for cost containment from consumers. America can no longer afford to let the continued increase in health care cost go unchecked. Those who embrace managed care feel that it will keep the cost under control while promoting health. Currently, 53.3 million Americans are covered by managed care; it is expected that by the turn of the century, this number will double.

Most physicians dislike managed care because they feel that it dictates to them various aspects of patient care and interferes with their ability to make decisions. Physicians feel that they chose the profession to have independence and perceive managed care to be violating that principle. In addition to "managing" the care of the patient, most managed care organizations also limit the reimbursement for services by a variety of ways including discounted fees and capitation payments.

Except in some parts of the country, physicians generally feel that they are losing control over their practice and destiny. Those who resist change find it even harder to cope with the rapid escalation of managed care. In the northeast, managed care penetration has been late but is progressing

like a wild fire. Within the past 5 years, New York state has encouraged participation of Medicaid and Medicare recipients in managed care. At present, approximately 27% of insured in New York state are covered by managed care plans. This has considerable impact on physicians' practices.

Even though capitation payment to individual physicians may not be profitable and may adversely affect the practice, capitation payment to a group for defined services may prove to be profitable. The discussion will evolve around the performance of an Independent Physicians Association (IPA), which receives capitation payment from a health maintenance organization (HMO). The IPA has instituted its own utilization review policies and procedures. By self-monitoring it creates a profit for all its member physicians. With adequate knowledge of managed care and with appropriate close working relationship among the physicians and good utilization principles, physician groups can use managed care to their advantage by making profit and gaining control of their practice.

Scientific Session III

Friday, August 30, 1996

10 a.m. to noon

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International Physician's Exchange Program

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There is a large growing population of well-qualified Muslim physicians in the U.S. with backgrounds from all over the world. Muslim physicians are prevalent in every specialty of medicine and surgery from the well established practices to the academia of pristine institutions. There also is a tremendous and urgent need in developing Muslim countries for quality health care and physicians. This program is being established to help such Muslim communities in dire need. This program will provide an international platform to facilitate the allocation of interested volunteering physicians to the needy Muslim populations in the countries interested.

Purpose:

- 1) To establish an international platform for exchange of physicians for voluntary services to deliver health care to poor and deserving Muslims in underdeveloped countries.
- 2) To develop an international relationship among Muslim physicians to enhance mutual benefits.
- 3) To facilitate the transfer of physicians, nurses, paramedical personnel, and medical students in both directions for education and research.

- 4) To develop preventive health care awareness programs for public education (general hygiene, public health, and screening programs).

Goals (1996-98):

- 1) Recruit practicing U.S. physicians and registered nurses to volunteer for a period of 2-4 weeks to assume direct patient care and share their clinical expertise in India and Pakistan.
- 2) Facilitate the transfer of medical equipment (new and used) to the deserving hospitals and clinics.
- 3) Organize annual continuing medical education programs.
- 4) Develop public health awareness education programs for primary care physicians and the general public.

We can accomplish these goals and reach out for our Muslim brethren around the world with the help and guidance of Allah [S.W.T.] and the help of large number of Muslim physicians in the U.S. A detailed outline of this program with a prototype example of these activities in Hyderabad, India, will be presented. At the conclusion of presentation, a brief survey will be handed out for recommendations, feedback, and support.

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Severe Necrotizing Infection By "Flesh-Eating" Bacteria: The Surgical Management

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Introduction: Invasive group A *streptococcal*, or flesh-eating bacterial infections, recently have attracted widespread media attention. Although necrotizing soft tissue infections have been reported since 1924, recently identified cases appear to be caused by a more virulent serotype of *streptococcus pyogenes*. Herein, is presented a case of gangrenous faciiitis, myositis, and myonecrosis of soft tissues in the trunk and axilla secondary to *streptococcal* infection, successfully treated, and reconstructed with a parascapular fasciocutaneous flap.

Case Presentation: A 29-year-old previously healthy white male presented to his local physician with fever, nausea, vomiting, diarrhea, and left shoulder pain. He was managed expectantly with oral antibiotics, but within 48 hours, was admitted in septic shock with severe fever, jaundice, hypotension, and cellulitis with a petechial rash overlying the left arm, trunk, and axilla. A CT scan of the chest revealed inflammatory soft tissue changes. Aggressive debridement of the left trunk and axilla was performed and purulent fluid collections dissecting within subcutaneous, submuscular, and interfascial planes were found. Cultures revealed group A *streptococcus pyogenes* septicemia.

The hospital course was significant for multiple organ system failure and progressive necrotizing fasciitis and myonecrosis of the pectoralis and latissimus requiring multiple surgical debridement. Successful treatment of the patient's sepsis resulted after 58 days of intensive care support; the antibiotic regimen consisted of penicillin G and clindemycin. The resulting left trunk defect measured 250 square cm with exposure of the deep chest wall and axillary vessels. On day 65, the patient underwent a perascapular fasciocutaneous flap trunk and axillary reconstruction. He completely recovered and was discharged on day 78.

Discussion: Over the past decade, there has been a resurgence of necrotizing soft tissue infections secondary to a renewed virulence of invasive group A *streptococcus pyogenes*. Early cases of these infections were uniformly lethal. Bacterial infection of skeletal muscles is relatively rare, and the resultant gangrene and myonecrosis is often fatal after a rapidly fulminant course. The virulence is generally attributed to pyrogenic endotoxin A, which acts as a superantigen inciting excessive and unregulated cytokine production. The resulting overreaction of cytokines, clotting cascades, nitric oxide, and oxygen-free radicals triggers a series of pathways with vascular endothelial damage and tissue hypoxia, and necrosis as an endpoint. Cell wall antigens and proteases of the M-type 1 serotype have antiphagocytic properties, which increase invasiveness.

Although most *streptococcal* infections respond to treatment with systemic antibiotics alone, many additional modalities are essential for treating cases of fasciitis and myonecrosis. Timely recognition and early treatment offers the best chance for a favorable outcome. Aggressive surgical debridement, combined with critical care support and systemic antibiotic therapy, are necessary to overcome these frequently lethal infections.

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Arteriovenous Malformation of the Hand Associated with a Neurilemmoma of the Finger: A Case Report

Khalique S. Zahir, MD; Anthony Sterling, MD;
J. Grant Thomson, MD, FRCSC

Arteriovenous malformations (AVMs), are formed by enlarged proliferative blood vessels that occur most commonly in the head and neck region. Involvement of the hand is especially rare. The neurilemmoma is a relatively common solitary, benign tumor arising from the Schwann cell in nerve trunks. We present a case report of an unusual combination of these two soft tissue tumors of the hand. The symptoms and signs related to the thrombosis of the AVM masked those of the neurilemmoma and resulted in a delay in the diagnosis of the nerve trunk tumor.

A 74-year-old female presented with a 3-year history of right hand pain and paresthesias. A careful physical exam revealed only reproducible symptoms. Operative interven-

tion revealed a partially thrombosed cavernous arteriovenous malformation with benign histopathology. Due to continued discomfort extending into the small finger with persistent disabling symptoms, the patient was taken for excision of the finger mass, which revealed a neurilemmoma.

AVMs and neurilemmomas are both slow-growing benign tumors. We present a case in which both tumors presented simultaneously with nearly identical clinical findings. It is uncommon for two unusual hand tumors to occur simultaneously despite different histopathology. In fact, the expected incidence of finding synchronous tumors of the hand is 1.4 per 1,000 patients with tumors. Our theory as to why both tumors presented simultaneously can be explained by the double crush phenomenon. Both tumors probably did not occur concurrently; however, the presence of one tumor was not sufficient to cause symptoms. The evaluation of hand tumors can be elusive and should be approached with caution while managing these patients.

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Evaluation of Preemptive and Postoperative Diclofenac for Analgesia after Major Gynecological Surgery

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The concept of preemptive analgesia is quite new and has emerged with the advancements in the understandings of pathophysiology of pain. The aim of this study was to look at the pantazocine sparing effect of diclofenac sodium (DS) administered preemptively or immediately after surgery. After institutional approval and with informed consent, this study was conducted on 80 ASA class I females undergoing major gynecological surgery under general anesthesia. Patients were randomly divided into 4 groups of 20. All received similar premedication and anesthesia. Group A served as the control group. Group B additionally received DS 1.5 mg/kg I.M. before induction while groups C and D received the same after completion of surgery. Group D also received DS 6 hourly for 24 hours. Appropriate placebos were injected in groups A, B, and C in this double-blind study. Postoperatively, I.M. pentazocine was given only as a rescue analgesic on demand and not exceeding 120 mg/24 hour. Pain assessment was done at 8 and 24 hours on a 100 mm long visual analogue scale (VAS). The requirement of pentazocine as a rescue analgesic in 24 hours also was used as an indicator of pain. It was observed that the only significant difference in the preemptive (B) group from the control (A) group was a lower ($p < 0.01$) VAS pain score at 0 hours (immediatepostoperative). Group C had lower VAS pain scores only at 8 hours ($p < 0.001$). Group D

had lower pain scores ($p < 0.001$) at 8 and 24 hours, and the consumption of rescue analgesics also was reduced significantly ($p < 0.05$). We conclude that there is no scope or need for preemptive analgesia if the anesthesia is sufficient in blocking the pain sensation during surgery. Postoperative diclofenac on an eight hourly basis provides adequate analgesia and reduces the requirement of pentazocine.

21

Body Water-A Human Golden Pond

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Water is essential in our body as well as in all creatures. "We made from water every living thing." (Surah Al-Anbiya 21:30)

Cells are largely composed of it and suspended in it; our food is dissolved in it. Yet, despite the large amount of water in human body, there is no reserve.

Water deprivation in the fasting month of Ramadan is a reminder that water around us is priceless, a gift to all human beings and living creatures.

However, water is the possession of God only and never to be entrusted to mankind.

"We cause the rain to descend from the sky, therewith providing you with water, though ye are not the guardian of its source." (Surah Higr 15:22)

22

The Experience of Managing Diabetes in Palestinian Women in Refugee Camps in Jordan

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Little is known about the day-to-day experiences of living with and managing diabetes in a refugee camp. The purpose of this study was to describe how Palestinian women experienced and managed their diabetes under the hardships of the refugee camp. Although women and children make up the majority of the world's refugee population, there is very limited research of their specific problems and resources. Developing countries face major problems in diabetes management under conditions of poverty, scarce health resources, political instability, and natural catastrophe. The World Health Organization reported that patients with diabetes often do not receive optimal care, resulting in impaired quality of life, excess mortality, and increased health care costs.

About 3 million Palestinian refugees are still registered

with the United Nations Relief and Works Agency (UNRWA). Diabetes affects more than 26,000 Palestinian refugees as indicated by the number of refugee patients registered with UNRWA. In Jordan, the location of this study, there were about 10,500 registered refugee patients with diabetes in 1994, compared to 5,000 registered in 1990, a prevalence of 1,358 per 100,000 population. Despite the rapidly increasing number of Palestinian refugees with diabetes, studies of how these refugees manage diabetes have not been found in the literature.

Intensive in-depth interviews were conducted with 42 Palestinian refugee women with diabetes mellitus at two Palestinian refugee camps in Jordan from February through April 1994. Most women reported several hardships in dealing with their conditions that led to inadequate control over this life-long disease. Women viewed diabetes management as a psychosocial, rather than just a medical, regimen. Although they perceived insulin as the most important element of management, they could not follow this regimen as expected. Most women felt that diabetes had a great impact on their lives and that they managed the disease in their own way. Most refugee women were unable to apply safe measures of controlling diabetes because of inadequacies or a decline in their motivation to continue with the long-term care. This study identified important needs and elements for research, education, and health care for refugee women with diabetes.

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The Impact of Diabetes on Palestinian Women in Refugee Camps on Jordan

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This study describes how Palestinian women living in refugee camps perceived the impact of diabetes on their lives and their family unit as a whole. No previous studies about the experience of Palestinian refugees with diabetes have been located in the literature. Research about the daily experience of a person managing a chronic condition has relevance for clinical practice. Therefore, it is important to assess the perceived hardship and effects of such a chronic disease on people living in high-risk situations, such as in a refugee camp.

In-depth intensive interviews were conducted with 42 women with diabetes at two Palestinian refugee camps in Jordan during February and April 1994. The mean age was 47 years (range: 20-80) and the mean duration of diabetes was 13 years (range 3-35). More than 60% of the women were illiterate, married and had a mean of seven children. All school-aged women quit school after the diagnosis of diabetes. They all were single and reported diabetes to be the barrier to their getting married. The refugees' standards of living were low, and the status of being a refugee added

to the problems of being a woman with diabetes. The culture and the Islamic religious beliefs provided refugee women with inner strength to overcome their problems. Women talked about several effects of diabetes on their lives and their families. The effects were categorized in five domains: psychological, social, spiritual, economic, and physical effects.

The women perceived themselves to be different from nondiabetics, from other diabetics, and from the way they were before diabetes. Most women, especially the younger ones, viewed themselves as unhealthy and felt that diabetes made them less desirable and not fit for marriage. It also created social barriers and enhanced their feelings of isolation. Living with a chronic disease and chronic refugee status with continuously deteriorating living and health conditions made the woman constantly aware that they faced chronic uncertainty and unpredictability about their future. Diabetes affected the family system and social roles and disrupted the daily living and future plans of most women. In general, most women felt that diabetes had a negative impact on different aspects of their lives that contributed to their feelings of self-deficiency, depression, isolation, helplessness, sadness, and increased their worries and fears of the unknown future.

In conclusion, most women perceived that refugee status and disease had a great impact on all aspects of their lives and on how they viewed and managed their disease. This study identified important variables needed to establish the basis for future research about living with and managing diabetes and the ways of improving the quality of the women's lives. It also expands the limited knowledge and research base of how chronic diseases affect a refugee's life and its quality. This study identified several implications for practice and research. It emphasized the priority areas in which health professionals could assist the refugee women to cope with their condition, facilitate a smooth adaptation, and prevent adverse effects.

24

Phototherapy Increases Bilirubin Production and Red Blood Cell Destruction in Preterm Infants

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Background: To compare hemoglobin degradation and bilirubin production before and after starting phototherapy. Hemoglobin catabolized into globin and heme, which by microsomal heme oxygenase degraded into equimolar CO and biliverdin. Biliverdin then is reduced into bilirubin.

CO is excreted exclusively by the lungs; therefore, end tidal carbon monoxide corrected for inhaled CO (ETCO_c) reflects total bilirubin production and hemoglobin degradation.

Method: A prospective study design. The study group consisted of 24 preterm infants requiring phototherapy. Infants with hemolytic diseases, sepsis, and recent blood transfusions were excluded. ETCO_c was measured in preterm infants before and during phototherapy. Hemoglobin degradation and bilirubin production were measured by measuring end tidal carbon monoxide, corrected for inhaled CO (ETCO_c).

Results: The (mean \pm SD) birthweight of 24 preterm neonates was 1974 \pm 611 grams; gestational age 32.7 \pm 2.3 weeks; hematocrit 48.4 \pm 7.0 volume %; peak bilirubin was 13.1 \pm 3.2 mg/dl. First ETCO_c measurements were done at 59.6 \pm 22.2 hours of age, immediately before starting phototherapy. The second ETCO_c measurement was done at 13.7 \pm 7.9 hours after starting phototherapy. The second measurement of 2.6 \pm 0.6 ppm was significantly higher, compared with the first ETCO_c of 2.1 \pm 0.6 ppm ($p < 0.05$).

Conclusion: Phototherapy increases hemoglobin degradation and bilirubin production in preterm infants.

This project was supported by a grant from the Douglass

Scientific Session IV

Saturday, August 31, 1996

9 a.m. to 11:15 a.m.

25

Primary Hyperparathyroidism: Usefulness of Technetium-99M Sestamibi Scan in Imaging Parathyroid Adenomas

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Technetium-sestamibi imaging is a promising new technique for localizing parathyroid adenomas in patients with primary hyperparathyroidism. We reviewed the charts of 20 patients with proven primary hyperparathyroidism to assess this technique in localizing abnormal parathyroid lesions. There were 13 male and 7 female patients. The mean age for males was 38.4 \pm 4.2 years and 46.5 \pm 5.1 years for females. Serum calcium ranged between 10.1-15.5 mg/dl with a mean of 11.7 \pm 0.27. Plasma levels of intact PTH ranged from 90-407 pg/mL (nl 10-65). Eighteen of 20 scans were positive for abnormal uptake. Surgical findings and pathological reports were 100% concordant with scan findings, revealing 17 adenomas and 1 carcinoma. The weights of surgically removed adenomas confirmed by imaging ranged from 0.070-2.50 gms with a mean of 0.750. Two patients had negative scans, but pathologically confirmed adenomas removed at surgery weighing 0.715 and 0.350 gms,

respectively. Neither lesion was visualized by CT or MRI of the neck, but the second lesion was seen by ultrasound. In conclusion, the sestamibi scan is a sensitive imaging technique for the localization of parathyroid adenomas. Furthermore, this technique reduces the duration of surgery, thereby reducing surgical morbidity and cost.

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A Uniform Aggressive Approach to Treatment of Differentiated Thyroid Cancer

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The optimal treatment of differentiated thyroid cancer remains an unanswered question. Although many prognostic factors regarding disease-free survival and recurrence have been identified, considerable controversy persists as to which group of patients will benefit from what therapeutic modality. Most studies have addressed these questions from a retrospective analysis of thyroid cancer patients who have had a wide variety of age, histology, extent of disease, and who were treated with a variety of surgical procedures, adjunctive radioiodine therapies, and degrees of TSH suppression. Multivariate analysis can be useful in separating these factors, but it is hardly ideal. Prospective controlled studies comparing specific treatment regimens also are problematic given the number of study patients and lengthy follow-up required before meaningful data can be accumulated.

Therefore, we have retrospectively identified a group of patients with thyroid cancer at our institution who have been treated in a uniform aggressive fashion to include bilateral thyroid resection, high dose I¹³¹ ablation therapy (based on extent of disease), maximal TSH suppression, and close follow-up studies. We report at this time the impact of such an approach on survival and morbidity. We have identified 50 patients with a mean follow-up of 5 years. Results demonstrate no mortality among our patients to date.

	DeGroot Class				
	Total(41)	I(26)	II(8)	III(3)	IV(4)
Papillary					
Recurrent or Persistent Disease	7(17%)	3(12%)	1(12%)	1(33%)	2(50%)
Follicular					
Recurrent or Persistent Disease	1(11%)	1(11%)	NA	NA	NA

As our findings compare favorably to other studies, our approach to differentiated thyroid cancer would appear to be validated. We will follow this group prospectively in an attempt to demonstrate whether this approach yields optimal long-term outcomes.

27

Rapid Correction of Hypothyroid State by a Combination Therapy with Liothyronine and L-Thyroxine

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Rapid correction of a hypothyroid state is indicated in selected situations. These include hypothyroidism following total thyroidectomy for thyroid carcinoma and hypothyroid patients undergoing elective surgery. We treated five patients with a combination of liothyronine (cytomel) and L-thyroxine orally; this regimen resulted in a euthyroid state in 5-7 days. The age of the patients was 29.4 ± 3.5 years (mean ± SEM) with three females and two males. Three patients had total thyroidectomy for thyroid carcinoma; whereas, 2 patients had primary hypothyroidism. In one patient, attaining euthyroid status rapidly was essential for undergoing breast surgery. In the remaining patients, various reasons for rapid correction included deployment and personal reasons. The doses selected for these patients were 15-20 mcg cytomel TID for 2 weeks, L-thyroxine 0.3 mg daily for 2 days, 0.2 mg daily for 5 days, then 0.15 or 0.112 mg QD. This combination treatment achieved euthyroid status or suppression in 3-5 days (Table).

Thyroid Function Before and After Combination Therapy

	TSH	Free T ⁴ Index	T ³
Basal	161±75	0.80±0.19	Not Done
After Combination Therapy (days)			
3	6.92 ± 1.63	10.2 ± 0.49	300 ± 26
5	1.68 ± 0.38	11.7 ± 0.36	268 ± 24
7	0.34 ± 0.14	11.3 ± 0.45	246 ± 18
30	0.4 ± 0.23	9.3 ± 0.52	159 ± 9.5
Normal values	0.4-4.2 (MUII)	3.37-11.8	90-190 (ng/dl)

None of the patients had any side effects from the combination therapy. In conclusion, patients with hypothyroidism may be rendered euthyroid with a combination of cytomel and L-thyroxine in a relatively short period of time without any adverse effects.

The Association of Alcohol with the Etiology and Healing of Mandibular Fractures

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Mandible fractures represent common facial injuries, making up between 40-60% of all facial fractures. Males are reported to have a higher incidence than females (7:1). The most prevalent age group is 21 and 30. The most common etiologies include assaults and motor vehicle accidents. Alcohol abuse and its relationship to mandible fracture etiology and the outcome of fracture reduction have been documented in OMFS literature, with the majority of studies done in Europe. Most of these studies found that alcoholics had a higher complication rate. Adele, in a Swedish study, concluded that the most significant variable relating to delayed healing of mandible fractures is alcohol abuse. Malnutrition, common to alcohol abusers, also increases the risk of complications.

This study is a retrospective analysis of 53 mandible fracture cases presenting to Elmhurst Hospital Center, a level 1 trauma center in Queens, New York City, between fall 1993 and spring 1995. The goal of this study is to document the association between alcohol, the etiology of mandibular fractures, and mandible fracture complications occurring in the American inner city. The most common etiology was assault (74%); 25% had alcohol associated with the etiology of the injury; 26% were treated via open reduction alone, 51% were treated via open reduction plus IMF, and 21% were treated via IMF alone. The overall complication rate was 36%, including parathesis present on last postoperative followup. If behavioral complications are included, such as premature release of IMF, lost to postoperative followup and refusal of treatment, the complication rate would increase to 49%. Nineteen of the 53 patients had a history of alcohol abuse. Of these 19, 11 developed postreduction complications. Eight of the 53 patients were social (nonabusive) drinkers; 4 of the 8 developed complications. Twenty-six patients had no documented history of ETOH use or abuse. Of these 26, only 4 developed postreduction complications.

To determine whether alcohol has a significant role in the etiology of mandible fractures, a one sample binomial test was completed, obtaining a p value of 0.0002. This indicates that alcohol plays a role in the etiology of mandible fractures. A chi-square analysis was done to determine whether alcohol abuse or use increases the complication rate. A p value of <0.045 was obtained; this indicates that alcohol does increase the complication rate. A second chi-square analysis was performed to determine whether the

amount of alcohol consumed effects the complication rate. It was found that alcohol, regardless of the amount, statistically increases the complication rate of mandibular fractures.

Effect of Oral Contraceptive Pills on Serum Cholinesterase Activity

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Serum cholinesterase (S ChE) activity is definitely decreased in pregnancy as a result of enzyme-induced depression of liver function. Since the same enzymes are consumed in oral contraceptive pills (OCPs), those patients consuming OCPs might also have a reduced S ChE activity. As many women of child-bearing age are consuming OCPs and may require an anesthetic at any time, it should be known if they have low S ChE levels, rendering them at risk to prolonged apnea after succinylcholine. This study was conducted for the same purpose. After institutional approval and with informed consent, 50 healthy nonpregnant females of child-bearing age attending the family planning clinic were randomly selected for this study. Blood samples for estimating S ChE levels were collected before starting OCPs, which served as controls. After starting OCPs, blood samples were collected at weekly intervals up to 12 weeks. Novelon (Infar), an OCP containing 0.15 mg of desogestrel (a progestagen) and 0.03 mg of ethinylestradiol (an estrogen), was given to all patients. S ChE activity of the samples was measured by the procedure of Sigma Chemicals (1974), based essentially on the method of Rappaport et al. (1959). All the subjects ranged between 15-45 years. The mean age was 28.11 years \pm 4.36 SD. The mean SChE activity was 64.11 Rappaport Units (RU)/ml \pm 9.86 SD before starting the OCPs. The enzyme levels started decreasing by 2 weeks, but the fall was not significant ($p > 0.05$) up to 4 weeks. Five weeks after starting the OCP, there was a significant fall ($p < 0.05$) in the mean enzyme levels (53.58 RU/ml \pm 8.69 SD). Further fall was not significant ($p > 0.05$), as compared to the enzyme levels at 5 weeks. The mean enzyme levels were 52.24 RU/ml \pm 8.54 SD at 12 weeks after starting the OCPs. Though the fall in S ChE activity after consuming OCPs is statistically significant, the levels still remained well above the lower limit of normal (normal range 40-80 RU/ml). Hence, there is no added risk of prolonged apnea after succinylcholine in healthy women on OCPs.

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Atkinson's Prosthesis for Palliation of Malignant Esophageal Obstruction and Esophagorespiratory Fistulas: Experience with 33 Patients

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Palliative modalities currently available for advanced esophageal malignancies have significant limitations. Esophageal endoprostheses have been deployed successfully to relieve the progressive dysphagia and to restore luminal patency in esophagorespiratory fistulas complicating these patients. Thirty-three consecutive patients with malignant esophageal obstruction (n=22) or esophagorespiratory fistulas (n=11) were prospectively followed after endoscopic dilatation and intubation using Savary Gillard dilators and Atkinson's prosthesis. Postprocedure complications, quality of life, and survival were assessed. The prosthesis was placed successfully in all patients following endoscopic dilatation. Mean postdilatation diameter was 12.9 mm with a range of 7-16 mm. Dysphagia improved by at least two grades in 32 of the 33 patients (96%). The mean dysphagia grade fell from 3.45 to 1.09. All patients were able to resume a semisolid diet. Complications occurred in 11 of 32 patients (33.3%) and included nasal ulcers from the thread anchoring the prosthesis (3 patients), tube blockage by the tumor overgrowth or food bolus (2 patients), upward or downward tube migration (2 patients), severe hallitosis (2 patients), pleural effusions (2 patients), myocardial ischemia (1 patient), transient respiratory distress (1 patient), Atkinson tube psychosis (1 patient), and esophageal perforation with septicemia (1 patient). The latter patient died, giving a mortality rate of 2.9%. The quality of life index (QLD) examined five specific items: activity, living, health, support, and outlook on life. Each was rated on a three-point scale (0-2). The mean best postdilatation QLI (6.6) was better than the mean pretreatment QLI (5.1). The median survival was 4.75 months (range: 0.25-12.25 months). Endoscopic intubation with Atkinson's prosthesis is an effective, safe, and well-tolerated procedure in advanced esophageal cancer.

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Percutaneous Correction of Vaginal Vault Prolapse

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Objective: A simple corrective technique for vaginal vault prolapse in posthysterectomy women.

Method: Ten patients who had a vaginal vault prolapse as well as stress urinary incontinence underwent a needle suspension for the correction of both pathologies. After successful placement of the bladder neck suspension sutures, a needle suspension of the vaginal vault was done through the same small incision. The nonabsorbable monofilament sutures are placed posterolaterally using direct digital palpation through the vagina. They were then transferred back up and anchored to the abdominal rectus fascia using silicone bolsters.

Result: The results were immediately appreciable and the repair also augmented the vesical neck suspension by providing additional support to the base of the bladder.

Conclusion: This quick, minimally invasive procedure produces immediate results for a difficult and recurring problem.

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Percutaneous Bladder Neck Suspension

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Objective: An effective and minimally invasive method for the correction of stress urinary incontinence in women.

Methods: Forty-four patients with subjective symptoms of stress urinary incontinence were evaluated with cytometrogram and cystoscopy. Outpatient percutaneous bladder neck suspensions were performed by placing two bone anchors with a nonabsorbable monofilament suture attached to the pubic bone. The suspensory sutures are passed behind the pubic bone and placed at four points at the bladder neck and mid urethra. The sutures are transferred back to the suprapubic space and tied over the fascia on top of the pubic bone. Proper placement was assured by palpation of the bladder and urethra through the vagina and by cystoscopic confirmation. A suprapubic catheter was placed as a temporary urinary diversion. Operative time is approximately 30 minutes.

Results: Initial results revealed minimal pain and complications and no urinary retention. Patients were voiding on their own and most had returned to the full activities of daily living in two weeks. Six-month follow-up continues to show excellent results with continence.

Conclusion: Percutaneous bladder neck suspension is an excellent procedure for stress urinary incontinence and can be used in women of all ages and when other procedures have failed. The surgery is minimally invasive, can be done on an outpatient basis under local anesthesia, and has a low complication rate. Long-term results still need to be evaluated.

Future Prospects for International Medical Graduates in the United States

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Graduate medical education reform in the United States has had a profound impact on the availability of residency positions to international medical graduates (IMG). Historically, medical education in the U.S. has been driven by the market. The influx of large numbers of IMGs to the U.S. over the past few years has led to a large number of unemployed physicians from different parts of the world. In 1993, the Council on Graduate Medical Association (COGME), the Association of American Medical Colleges, and the Institute of Medicine presented the impact of overspecialization on the healthcare industry and suggested an emphasized approach to primary-care programs. This included several incentive programs like the loan-forgiveness program for primary-care specialties for the USMGs, H-I visa opportunities for IMGs seeking training, and J-I waivers for the IMGs seeking a job in primary-care areas. This led to an influx of USMGs (in the primary care specialties as reflected in the change in matching trends in the primary-care specialties. For the second consecutive year, more than 50% of the nation's 14,539 medical school seniors chose to pursue a training in either internal medicine, family practice, or pediatrics, according to the results of the 1996 match. Family practice showed the most dramatic increase of 9.1% over the past year. IMGs, who in the past few years have added significantly to the growing pool of physicians in this country, seem to have followed the same path as USMGs and have chose subspecialty training over primary care. A changing market force has led to the reduction of specialist needs in the future.

The changing market and introduction of managed care has led to a reduced need for specialists in the U.S. Increasing numbers of IMGs are competing for a reduced number of positions left unfilled by the USMGs in the 1996 match. This trend will continue to worsen in the future as illustrated below:

- a) Obtaining an ECFMG certificate does not guarantee a job or training position in the U.S.
- b) Specialty training positions like cardiology, G.I., and pulmonary medicine are being drastically reduced and opportunities will be minimal or nonexistent.
- c) Obtaining a residency position without a personal interview with the faculty in the U.S. will be impossible.
- d) The few IMGs who will secure positions will be those who demonstrate exceptional talents in examination scores.

research, and personal attributes including mastering written and spoken English.

e) Before qualified physicians invest personal and financial resources in the USMLE, these factors should be carefully reviewed.

f) In 1996, more than 7,000 qualified IMGs, a majority of whom interviewed personally in training programs in the U.S., were unable to find a position.

Scientific Session V

Sunday, August 29, 1996

9 a.m. to 10 a.m.

Rationing of Critical Care Resources: A Question of Dollars and Sense

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Revamping the U.S. health care system has led to widespread attritions, especially in critical care arenas. We did a prospective cost analysis study in an 11-bed medical intensive care unit (MICU), and, subsequently, on the medical floors. The impact of age, advanced directives, and HIV status were evaluated. Additional information regarding APACHE scores, mortality, and length of stay (LOS) per category also was collected.

A total of 116 patients, 69 men and 47 women, admitted to the MICU were studied between March 1994 and June 1994. Their mean age was 52 years.

The patients who died were responsible for 41.4% and 32% of ICU and total expenses, respectively. Interestingly, those patients with APACHE scores of greater than 10 accounted for 79% of the total and ICU expenses, and 99% of the deficit was incurred from these patients. The HIV (11% of ICU admissions) patients accounted for 17% of the total ICU expenses. This constituted the best reimbursement group in our county hospital. DNR patients (7% of the ICU admissions) consumed 11% of the ICU expenses, with a mortality of 90%.

In summary, we found that in an MICU of a county hospital:

- 1) The highest expenses were incurred in caring for patients with sepsis; however, the reimbursement for this category was high.
- 2) The greatest losses were incurred in patients with GI bleeds and strokes, hence, a consideration for a stepdown unit where the patient can be transferred expediently.
- 3) The hospital had the maximum benefit from patients with bronchial asthma.

4) It appears that caring for HIV, DNR, and elderly patients is an economically viable proposition.

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Effective Use of Computers in Medical Practice

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A majority of physician's offices are equipped with personal computers since their introduction 16 years ago. The initial rationale to computerize the medical office was for billing. The numerous health insurers in this country and the increasing number of patients requesting payment from a third party for services have made the computer the ideal choice for claim filing. With the introduction of electronic billing by Medicare and Medicaid, and electronic payments to the providers, physicians who seek a majority of their fees from third party payers had to resort to computers.

There is an added advantage to the use of computers in physicians' offices. Providers who are participating in managed care plans know the importance of compliance of utilization criteria established by managed care organizations and how it affects the physician and his office staff's time. In addition, if the physician is receiving capitation payment for services, he has to submit encounter data to the insurer. More important to the financial viability of the practice is to know if the capitation is the right amount and compare it to fee-for-service reimbursement to see if there is any advantage to capitation. Physician's offices require ways to keep up with regulations imposed by each managed care organization. This becomes even more important when it is a multispecialty group in which all members of the group are not participating with all insurance companies.

In a group practice setting, there must be monitoring of the individual physician activity, professionally and financially. Relative value units may have to be used to compare services and establish a reward mechanism based on the utilization of resources. Groups require sophisticated computer systems to maintain common medical record information on patients, especially when the group has many offices.

Today's computers are inexpensive, but require advanced programs to achieve the requirement of physicians' offices and coordinate with activities at hospitals and nursing homes. They should be able to help monitor the requirements imposed by managed care and be an efficient tool for practice management.

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Neuropsychological Approach to Maximization of Self-Regulation Mechanism in Psychoneuroimmunology

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A neuropsychological approach to maximize the self-regulating capability of the human mind as a means to enhance the effect of psychoneuroimmunology (PNI) is explored on the basis that the human mind is the only natural system that maintains its entropy at negative levels, implying homeostasis. Also, since a truly monotheistic belief in a creator is known to constitute the highest cognitive achievement, it is shown that the maximization of the self-regulation mechanism in psychoneuroimmunology may depend upon how efficiently the mind maintains its consciousness of a monotheistic creator, under attenuating conditions, under depression, or pathological threat. A design for clinical study is proposed for testing two sets of patient populations: one agreeing to believe in a monotheistic creator, and a control population, which prefers not to believe in a god or creator. Both groups would receive similar therapeutic treatment for depression, for example.

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The Total Health Approach in Islam

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While the West places great emphasis on the physical and the visible, Islam is concerned with the total health of the total person: physical, mental, and spiritual. This diversity is rooted in the West's preoccupation with the individual's here-and-now outlook, while Islam places balanced emphasis on the here as well as the hereafter for the individual and the family or the society. It is one's way of life versus total way of life.

In this paper, the author outlines the broad tenets of Islam, which condition the thought process of a Muslim and provide the framework for life from the cradle to the grave. The author highlights the total health approach encompassing the guidelines governing the daily diet, fasting, sexuality, moderation, self-discipline, and preventive measures, drawing from the pool of acquired and the revealed knowledge for seeking, achieving, and maintaining total health and happiness in this life and beyond.