Important Advances in Clinical Medicine

Epitomes of Progress—General Surgery

The Scientific Board of the California Medical Association presents the following inventory of items of progress in general surgery. Each item, in the judgment of a panel of knowledgeable physicians, has recently become reasonably firmly established, both as to scientific fact and important clinical significance. The items are presented in simple epitome and an authoritative reference, both to the item itself and to the subject as a whole, is generally given for those who may be unfamiliar with a particular item. The purpose is to assist the busy practitioner, student, research worker or scholar to stay abreast of these items of progress in general surgery which have recently achieved a substantial degree of authoritative acceptance, whether in his own field of special interest or another.

The items of progress listed below were selected by the Advisory Panel to the Section on General Surgery of the California Medical Association and the summaries were prepared under its direction.

Reprint requests to: Division of Scientific and Educational Activities, California Medical Association, 731 Market St., San Francisco, CA 94103

Chronic Visceral Ischemia

THE SYNDROME of chronic visceral ischemia has emerged as a uniform pattern of postprandial epigastric pain and weight loss distinct from other abdominal pain syndromes. Two mechanisms have been recognized. The less common of the two is compression of the celiac artery and occasionally the superior mesenteric artery as well by the median arcuate ligament of the diaphragm. The syndrome is largely limited to young women. Division of the ligament and instrumental dilatation of the residual celiac stenosis has provided dramatic and durable relief of pain in 62 of 68 patients operated upon at the University of California, San Francisco.

The other mechanism is multiple visceral artery occlusions by atherosclerosis. The traditional technique for surgical management has been the utilization of bypass grafts extended in a retrograde fashion from a more distal portion of the aorta to a patent segment of the involved artery beyond the site of disease. These have been accompanied by a high frequency of early or late failure. In order to improve these results, variations of the original grafting techniques and endarterectomy have been tested during the last eight years at the University of California, San Francisco, and the results evaluated by late aortography. An unanticipated finding was the predominance of females in the series and the frequency of a form of atherosclerosis in the ab-

dominal aorta in which the intima became a soft, thickened and homogeneous layer which virtually overflowed the visceral and often the renal arteries as well. Thirty-eight patients have been operated upon. The conclusions from this experience were as follows:

- Grafts placed in an antegrade fashion and originating from the generally undiseased distal thoracic aorta (transabdominal approach) are hemodynamically more sound, and easy to apply.
- When both the celiac and superior mesenteric arteries are involved, grafts to the celiac alone will generally suffice to revascularize the distal branches of both arteries and relieve symptoms.
- Late failure is a function of the graft material. Long-term patency of Dacron® grafts was 6/6, arterial autographs 3/3 and saphenous vein grafts 1/6. Saphenous vein grafts are no longer used.
- Endarterectomy is an effective method for a more complete operation. When done through a thoraco-retroperitoneal abdominal approach and a trapdoor aortotomy, removal of a sleeve of aortic intima produces a specimen that includes the orifice lesions in the visceral arteries and the renal arteries also if they are involved. This approach facilitated coincident aorta-iliac reconstruction which was indicated in eight patients.

EDWIN J. WYLIE, MD

REFERENCES

Stoney RJ, Ehrenfeld WK, Wylie EJ: Revascularization methods in chronic visceral ischemia caused by atherosclerosis. Ann Surg 186:468-478, Oct 1977

Stemmer EA, Connolly JE: Mesenteric vascular insufficiency—Identification and management. Calif Med 118:18-29, Mar 1973

Atheroembolism

ALTHOUGH THE MAJORITY of thromboemboli are cardiac in origin, detachment of loose atheromatous aggregates from a major artery may be another serious yet correctable source of embolization. Though atheroembolism was first recognized in 1862, its importance has not been appreciated until recently. Dissemination of grumous material from ulcerated plaques at the carotid bifurcation is now well established as a cause of transient ischemic attacks or stroke and carotid endarterectomy for the condition is being done with increasing frequency.

Cases of atheroemboli to the abdominal viscera including the kidneys, pancreas, stomach or bowel have been recorded in the literature, but as yet surgical remedial measures in such cases are rarely attempted.

The symptoms of atheroemboli to the lower extremities are often insidious and may at times elude the most astute diagnostician. Myalgia, aching and cramps, often intermittent in nature, may be the first symptoms. Eventually, gangrene of the toes develops despite the presence of ankle pulses. Successful management of patients involves clinical awareness of the entity followed by angiographic confirmation and prompt endarterectomy or graft replacement of the diseased aorta. Arteriograms typically show ulcerated disease or plaquing of the aorta with sharp angiographic blockage of digital vessels. Atheroembolism may also be seen in the upper extremity but with less frequency.

JACK H. M. KWAAN, MD
JOHN E. CONNOLLY, MD

REFERENCES

Kwaan JH, Molen RV, Stemmer EA, et al: Peripheral embolism resulting from unsuspected atheromatous aortic plaques. Surgery 78:583-588, Nov 1975

Kwaan JH, Connolly JE: Peripheral atheroembolism: An enigma. Arch Surg 112:987-990, Aug 1977

Banis JC Jr, Rich N, Whelan TJ Jr: Ischemia of the upper extremity due to noncardiac emboli. Am J Surg 134:131-139, Jul 1977

Management of Hepatic Trauma

MAJOR ADVANCES in safety of hepatic resection have been based upon new technical, anatomical and metabolic knowledge. Nevertheless, mortality has remained high when injuries have been associated with major vascular injury and when hepatic lobectomy has been required. The additive effects of lobectomy, a formidable procedure, upon existing preoperative and operative hypovolemia, hypotension and associated injuries, have often resulted in death.

There has been renewed interest in resections of lesser magnitude but adequate to debride damaged liver and to control bleeding. Even extensive lacerations and explosive injuries caused by abrupt deceleration can often be successfully managed by the piecemeal removal of devitalized hepatic fragments and careful ligation of vessels and ducts, followed by adequate drainage.

Rapid fluid resuscitation and complete evaluation should be followed by prompt surgical exploration of the abdomen with early extension of the incision into the chest by partial splitting of the sternum, if necessary, to provide sufficient exposure of bleeding sites and to control them.