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ABSTRACTS

This section of THORAX *is published in collaboration with the abstracting journal,* ABSTRACTS OF WORLD MEDICINE, *published by the British Medical Association. In this* JOURNAL *some of the more important articles on subjects of interest to chest physicians and surgeons are selected for abstract, and these are classified. No one section is necessarily represented in any one issue.*

Disorders of the Oesophagus

Congenital Atresia of the Esophagus Treated by a One-stage Primary Esophagogastrostomy Employing a Right Transpleural Approach. MADDEN, J. L. (1951). *J. thorac. Surg.*, **21**, 460.

In 10% of cases of oesophageal atresia the distal end of the oesophagus may be agenetic or hypoplastic, there being no evidence of the more usual tracheal or bronchial fistulous communication. The key to diagnosis in this type of oesophageal abnormality is the failure to demonstrate by radiological means the presence of intestinal air. The author considers primary restoration of the continuity of the alimentary canal to be the ideal surgical treatment and describes his management of such a case.

A premature female infant from birth suffered from attacks of cyanosis after each feed, and excessive oronasal secretion was noted. Lipiodol introduced by catheter demonstrated a blind upper end to the oesophagus and in plain radiographs there was an absence of gas shadows. On the third day of life a right transpleural oesophago-cardiostomy was performed. The operative procedure is well illustrated. Division of the left gastric vessels permitted adequate mobilization of the stomach for this anastomosis. The surgical treatment, of nearly 4 hours' duration, was well tolerated, but the child died from increasing attacks of cyanosis 26 hours later. Other congenital abnormalities were present.

C. A. Jackson.

The Pathology of Experimentally Produced Lye Burns and Strictures of the Esophagus. BOSHER, L. H., BURFORD, T. H., and ACKERMAN, L. (1951). *J. thorac. Surg.*, **21**, 483.

In order that the pathological changes occurring after lye burns might be studied and related to treatment the authors devised a method of producing sublethal alkaline burns of the oesophagus in a series of dogs. The animals had difficulty in swallowing saliva after the fifth day, and in all those surviving incomplete strictures developed. In the lower half of the oesophagus, the region of maximum burn, there developed within 24 hours epithelial destruction, oedema, and congestion, the latter predominantly in the subglandular layers of the submucosa. Within 48 hours this layer became infiltrated with inflammatory cells and thrombosis of many vessels occurred, followed by superficial gangrene, with consequent sloughing of the surface layers; bacterial invasion was superadded, leading to intramural abscess formation and final chronic inflammatory changes. Re-epithelization was slow, being incomplete at 6 weeks; stricture formation developed between the second and fourth weeks in spite of a relatively normal, intact muscularis.

Although mechanical dilatation was not carried out in this series the authors infer that early instrumentation in the phase of inflammation and necrosis is unwise, while they defer judgment on the value of delayed dilatation.

C. A. Jackson.

Esophagocardiomyotomy for Intractable Achalasia. HAWTHORNE, H. R., and DAVIS, H. C. (1951). *Delaware med J.*, **23**, 32.

The authors report their experiences in the surgical management of 7 cases of achalasia of the oesophagus which had proved intractable to conservative measures. They employed the anterior modification of the Heller operation suggested by Garin. Access was obtained by a high left paramedian or median incision in 6 cases and by a transthoracic approach after resection of the 8th rib in one case. The left triangular ligament of the liver was then divided and the left lobe retracted to the right. The peritoneum over the oesophageal hiatus was incised and the lower oesophagus mobilized for 3 in. (7.5 cm.), care being taken to avoid injury to the vagi. The incision of the oesophageal musculature extended upwards for 2½ in. (6.25 cm.) above the cardio-oesophageal junction into the dilated part of the oesophagus, and downwards on the anterior gastric wall for 1½ in. (3.75 cm.). All muscle fibres were divided down to the mucosa till the latter bulged freely. Injuries to the mucosa were repaired by fine silk or cotton sutures and a drain was left down to the oesophageal hiatus. A Levine tube which was placed in the stomach before operation was retained for 2 days post-operatively, at the end of which time a semi-solid diet was given. There were no deaths, and the symptomatic result was excellent in all cases. Usually post-operative radiological studies showed considerable reduction in oesophageal dilatation.

J. C. Goligher.

Neoplasm

Terminal Bronchiolar or "Alveolar Cell" Cancer of the Lung. Report of Thirty-three Cases. WATSON, W. L. and SMITH, R. R. (1951). *J. Amer. med. Ass.*, **147**, 7.

In this paper are described 33 cases of "terminal bronchiolar or alveolar cell cancer of the lung." These

were found in a review of the records of 1,585 malignant lung lesions encountered at the Memorial Hospital, New York, between the years 1932 and 1951. In this small series the average age of the patients was 55.6 years, and a quarter of the lesions had occurred in women. The presenting symptoms usually, but not invariably, had focused attention on the chest. The commonest radiological finding was that of peripherally situated rounded shadows, either single or multiple, and in some cases bilateral. The sputum was diagnostic in some of the cases.

Characteristically the lesions were peripheral, mostly nodular, occasionally diffuse, involving a lobe or even the whole lung. There was no primary involvement of a main bronchus, but secondary involvement of the pleura was not uncommon. The histology in these cases is considered to be distinctive. The rate of operability was found to be higher than in cases of bronchogenic carcinoma, but it is acknowledged that the series is too small for any definite conclusions to be drawn.

I. Grayce.

Submucous Biopsy of the Bronchi in the Diagnosis of Carcinoma of the Lung. MANZOCCHI, L., and VAGO, A. (1951). *Chirurgia, Milano*, **6**, 91.

Early diagnosis of bronchial carcinoma depends often on the biopsy findings which, in some cases of submucous tumour without ulceration, may be unsuccessful and even misleading.

The authors have devised a slender fenestrated punch with which they were able to remove safely small rolls of tissue from the submucosa. In 5 cases, which are illustrated, this method has given reliable results where the usual bronchoscopic biopsy and histological examination of the expectoration had failed.

L. Michaelis.

Neurogenous Tumours within the Thorax. A Clinico-pathological Evaluation of Forty-eight Cases. ACKERMAN, L. V., and TAYLOR, F. H. (1951). *Cancer*, **4**, 669. Bibliography.

This paper contains a review of 48 cases of tumours of nervous origin involving the thorax. Symptoms are mainly due to compression; for example, hoarseness from pressure on the recurrent laryngeal nerve and Horner's syndrome from involvement of the cervical sympathetic. Such signs may arise from pressure alone and are not necessarily an indication of malignancy. There are no characteristic radiographic appearances which distinguish these from other intrathoracic neoplasms. The treatment of choice is excision, with the possible exception of the neuroblastomata, which have a poor prognosis. The prognosis for the ganglioneuromata and for the tumours arising from nerve sheaths, such as neurilemomata, is good. Few of these tumours are malignant. The neurogenous tumour is the commonest neoplasm of the posterior mediastinum.

Lambert Rogers.

Surgical Treatment of Three Cases of Pleural Sarcoma. RAMSTRÖM, S., and HELLSTEN, H. (1951). *J. thorac. Surg.*, **21**, 116.

The authors describe 3 cases of localized pleural "sarcomata," all of which were found fortuitously during routine radiography. All the growths were benign, all were large (6 to 9 cm. in diameter), but all appeared microscopically to be sarcomata. None involved intercostal structures or ribs. Post-operative radiotherapy was given in each case, and in none has there been a recurrence in observation periods of 2½ years, 1½ years, and 3 months respectively.

The author comments that these tumours are probably better described as benign localized mesotheliomata.

J. R. Belcher.

Thoracic Surgery

Endobronchial Anesthesia for Intrathoracic Surgery. BONICA, J. J., and HALL, W. M. (1951). *Anesthesiology*, **12**, 344.

In pneumonectomy, broncho-pleural fistula, and lung abscess, endobronchial anaesthesia is advised for the following reasons: to prevent sudden flooding of the bronchial tree or contamination of healthy lung by secretions, to obtain a completely closed system with no loss of gases into the pleural cavity, to render the affected lung immobile and collapsed, and to permit the bronchus to be widely opened and aspirated by the surgeon. A history of the development of endobronchial anaesthesia is given, and a technique of blind endobronchial intubation is described. The usual pre-operative measures (such as vital capacity estimation and postural drainage) are carried out, particular attention being paid to any deviation of the trachea; premedication with small doses of barbiturate, morphine or demerol (pethidine), and atropine is followed by topical analgesia of the trachea and bronchi by transtracheal injection of 3 ml. 5% cocaine or 2% pontocaine (amethocaine), the patient sitting up and leaning towards the side to be intubated; paravertebral block is performed on the affected side (4 segments—2 on either side of the rib to be excised—10 ml. of 0.15% pontocaine for each segment, using no adrenaline, as cyclopropane is used). Induction is with 2.5% pentothal (thiopentone) to mid-surgical anaesthesia, and maintenance by cyclopropane and oxygen to the 3rd plane; the healthy bronchus is then intubated.

A Magill No. 9 or 10 tube with a Waters-Guedel cuff as near to the bevel as possible (similar to the Magill endobronchial tube) is introduced by direct laryngoscopy. A long bevel (3 cm.) is cut on the tube for the right side, to allow aeration of the upper lobe, and a cuff with only one seam at the lower end is used, so that inflation of the cuff up to the upper end of the bevel is possible. Blind intubation of the right side is simple; the tube passes directly into the right main bronchus, and is adjusted so that breath sounds can be heard all over the right side, but not on the left, before inflation of the cuff. On the left side, the unprepared tube is used, and rotated in an anti-clockwise direction after the tip has entered the

trachea, so that the concavity is to the left; the left bronchus is entered until resistance is encountered; the tube is then slightly withdrawn and rotated back through 90 degrees in a clockwise direction, so that the bevel is again facing laterally, and the concavity anteriorly; the breath sounds are checked as before. At the end of the operation, the paravertebral block is repeated (and thereafter daily for 3 or 4 days), giving 6 to 8 hours analgesia; the patient is then put in the supine position and in moderately steep Trendelenburg position, while suction is performed as the tube is withdrawn. In lobectomy, the remaining lobes are allowed to expand post-operatively; so far none have failed to do so.

In 177 cases blind endobronchial intubation was employed; 36 had direct intubation using a Ruth–Bailey or Magill introducer, and in 3 a Crafoord tampon was used. Intravenous atropine was preferred to intravenous procaine or vagal block to prevent arrhythmias.

D. D. C. Howat.

Shoulder Girdle Dysfunction following Thoracoplasty combined with Partial Scapulectomy. A Study of Twenty-three Patients during a Two-year Period. DOPPELT, H. B., and GOLDBERG, J. (1951). *J. thorac. Surg.*, **21**, 584.

The authors have compared the shoulder-girdle movements of 10 patients after thoracoplasty with those of 23 patients after thoracoplasty combined with partial scapulectomy (resection of the inferior angle of the scapula). In both groups the thoracoplasty was most commonly a two- to three-stage procedure with resection of 6 to 7 ribs. The partial scapulectomy was performed with the final stage of the thoracoplasty (15 patients) or as an additional operation (8 patients). In the thoracoplasty group it was found that: (1) the scapulo-humeral angle (angle between axillary border of scapula and humerus) was virtually the same on both sides; (2) the scapula was elevated and displaced antero-medially; (3) abduction was diminished by 5 degrees; and (4) during abduction the vertebral border of the scapula protruded slightly. In the partial scapulectomy group all these changes were more marked: (1) the scapulo-humeral angle was increased by 13 degrees owing to rotation of the scapula; (2) the scapula was elevated and displaced antero-medially to a greater extent than in the thoracoplasty group; (3) abduction was diminished by 35 degrees and active abduction to an even greater extent, and there was no correlation between the scapulo-humeral angle and the degree of limitation of abduction; (4) during abduction the vertebral border of the scapula became more prominent and the whole scapula ascended on the chest wall.

The importance of the serratus anterior in shoulder-girdle movements, especially abduction, is stressed. This is illustrated by the marked limitation of abduction that follows a serratus anterior paralysis. Since the greater part of this muscle is inserted into the inferior angle of the scapula, its action of rotating the scapula is very greatly reduced after a partial scapulectomy. Full abduction of the arm will be possible only if other muscles take over its action, and this occurs only in unusually muscular patients. *R. Lambert Hurt.*

Experimental Reconstruction of Tracheal and Bronchial Defects with Stainless Steel Wire Mesh. BUCHER, R. M., BURNETT, W. E., and ROSEMOND, G. P. (1951). *J. thorac. Surg.*, **21**, 572.

The authors describe a well-conceived experiment in repairing tracheal and bronchial defects by the use of wire mesh. Were it possible to bridge such gaps adequately an important advance would be made in the scope of thoracic surgery, inasmuch as carcinomatous tissue could be excised more widely; and even if the trachea or one of the bronchi were involved an artificial "gap-filler" would maintain continuity of the respiratory passages.

Stainless-steel wire mesh was used throughout; the choice of the material was determined by the evidence as to its non-irritability in clinical and experimental surgery. The mesh becomes infiltrated and incorporated into surrounding tissue with little inflammatory reaction; and to prevent stenosis of the lumen, which might have been expected from the use of intraluminal tubes, no attempt was made to provide an airtight closure. The wire mesh was simply moulded to the required shape and anchored to the trachea or bronchus, and to itself, by stainless steel sutures. The experimental series included both segmental defects and partial defects. The results in the series where partial defects were caused were excellent; in those where entire segments of the bronchus or trachea were excised the results were not unequivocal. It was surprising to note the absence of any marked degree of subcutaneous emphysema. Epithelization was complete in 6 to 8 weeks, and in the 2 clinical cases in which the material was tried there was no untoward effect attributable to the wire mesh.

The authors [quite correctly] sum up their paper as a preliminary study from which much can be expected.

G. Blaine.

Observations on Division of Adhesions in Opaque Lobes. COELLO, A. J. (1951). *J. thorac. Surg.*, **21**, 135.

As the author doubted the twin dogmas that the main source of complications in a pneumothorax is the presence of adhesions and that no pneumothorax with adhesions can be good, he contrasted two types of opaque lobe from among 57 examples occurring in some 300 cases of adhesion section. One of these is triangular, wrinkled, blue; the other roundish, tense, shiny, and greyish. Before collapse the first group shows no evidence of bronchial stenosis, has little cough and sputum, and generally displays interstitial fibrosis and reduction of blood flow; the second has mucosal swelling, bronchial narrowing, irritative cough, and often pneumonic consolidation with vascular engorgement and exudation. Following the induction of an artificial pneumothorax, lobes of the first type rapidly collapse and cavity closure follows even if adhesions are incompletely divided, especially those which suspend the apex from the mediastinum; the second type, again irrespective of the success of adhesion section, gives rise to frequent and dangerous complications and should soon be abandoned (or never begun), reliance being placed rather upon pneumoperitoneum and phrenic paralysis before permanent collapse or excision. *Geoffrey Flavell.*