in 25%. Changes in the heart were patchy myocardial fibrosis in 44%, old coronary infarcts in 12%, fatty myocardial changes in 12%, and brown atrophy in 20%. Amongst the changes in the respiratory system were atrophic emphysema in 64%, hypertrophic emphysema in 28%, pulmonary oedema in 68%, bronchopneumonia in 32%, pleural effusion in 12%, and chronic bronchitis in 32%. Normal kidneys were found in only 12% of patients; the pathological changes in others included coarse scarring, granular surface, narrow cortex, thickened vessels, and excess fat.

The common post-operative complications according to their frequency and potential threat to the patient's life are the following. Bronchopneumonia is frequent and serious and often diffuse, with few demonstrable chest signs. Thus cough is slight but there is fever, and radiological changes in the chest are common. Cardiac complications are frequent and include congestive heart failure, coronary occlusion, and various arrhythmias. Pulmonary oedema is a frequent accompaniment of heart complications. Peritonitis is an important complication of various intra-abdominal lesions and operations; this is not tolerated well by aged patients. Attention is called to the frequency of infections in the urinary system which may be serious, and therefore early recognition and treatment is essential. Post-operative thrombosis and embolism often occur, and fatal embolism may be an accompaniment of impairment of the heart's action. Mental disorientation is worthy of special mention; the strength of the patient's mentality to withstand a major operation must always be assessed beforehand.

Special Points Regarding Treatment

Provided intelligent management is instituted many aged patients are brought safely through major surgical operations. Obviously emergency surgery is more risky than elective surgery, and according to Carp (1951) the former carries a mortality rate about two and a quarter times greater than for the latter. An adequate time is allotted for pre-operative treatment when elective surgery is contemplated, and nutritional defects are rectified as much as possible by routine methods. Oral feeding is preferable to other routes whenever this can be done, and a high calorie diet rich in vitamins is given. Any disturbance in the water and electrolyte balance is rectified, and when parenteral fluids are necessary they are selected carefully and administered according to the patient's exact requirements, controlled by laboratory investigations. Physiotherapy is given routinely, and the importance of the correct psychological approach is mentioned because aged patients require tactful and kindly handling in an optimistic atmosphere.

During the Operation.—Attention is given to the usual details of operative technique. Exaggerated positions on the table and rapid changes in the position of the patient are avoided. Any undue exposure of tissues is eliminated and careful haemostasis is essential. The circulatory system must not be overloaded with intravenous fluids, including blood, and the amount given of the latter is assessed by measuring the blood loss during the operation.

Anaesthesia

Premedication is minimal in amount and controlled carefully, because respiratory depression is easily induced. Therefore small doses of "omnupon," $\frac{1}{4}$ to $\frac{1}{2}$ gr. (10 to 20 mg.), or pethidine, 100 mg. or less, are given; the exact dose chosen is related to the body weight, general condition, and the results of the liver- and renal-function tests. Anaesthetic induction is smooth and adequate oxygenation is essential. It is necessary to avoid deep anaesthesia and marked fluctuations in the blood pressure. For the usual abdominal operations the following is a satisfactory method. The patient is anaesthetized with intravenous thiopentone sodium and not more than 0.5 g. is given. An endotracheal tube is passed and anaesthesia is continued with pethidine, given intravenously (dose 50 mg.); this is repeated if necessary, but not more than 25 mg. is given. For abdominal

relaxation tubarine up to 15 mg. is sufficient. A clear airway must be maintained, and bronchial aspiration may be required during and after the operation.

Post-operative Care

Routine methods are employed and emphasis is placed on certain aspects. Fluid, including blood, and electrolyte requirements are assessed and provided carefully. The manifestations of potassium deficiency, acidosis, or alkalosis are recognized early in their development and treated. Oral feeding is resumed as soon as possible. For post-operative sedation barbiturates are avoided and reliance is placed upon small doses of the morphine derivatives; chloral and bromides are also useful. Physiotherapy is given routinely, and early ambulation is required unless contraindications are present.

Summary

A series of 34 octogenarians who underwent surgical operation is reported. They are divided into two categories—those with malignant and those with non-malignant lesions—and the end-results are given. Certain principles in their treatment are stressed, and it is shown that many of them can be brought safely through major surgical operations.

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Medical Memoranda

Recovery after Overdosage with Methylpentynol

Methylpentynol is now being prescribed fairly widely as a hypnotic and as a means of allaying apprehension, but there are relatively few reports of the results of overdosage. The following case report describes recovery after ingestion of approximately 10 g. of methylpentynol in the form of a proprietary elixir ("oblivon"), and this appears to be the largest recorded overdosage followed by recovery.

CASE REPORT

A woman aged 39, weight 7 st. 8 lb. (48.3 kg.), was admitted to hospital on October 29, 1954, having taken approximately 5 oz. (150 ml.) of a proprietary elixir containing 250 mg. of methylpentynol per drachm (70 mg. per ml.). There was a history of previous mental illness; necessitating admission on a voluntary basis to a mental hospital in July, 1954, for a period of ten days. Since that time the patient had been depressed at intervals and had threatened to commit suicide.

About mid-morning on October 29 she drank 5 oz. (150 ml.) of methylpentynol elixir and was admitted to hospital at 3.30 p.m. She was then deeply asleep, but responded faintly to pressure on the supraorbital nerve. Her general condition was good: respirations 20, pulse 72, blood pressure 130/80. Her pupils were normal in size and reacted briskly to light.

On the assumption that absorption was probably complete, stomach lavage was not carried out. General supportive treatment was instituted, and methylamphetamine hydrochloride, 30 mg., was given intravenously every half-hour. At 6.30 p.m. she was less deeply asleep, and half opened her eyes when spoken to. Her general condition was good: respirations 21, pulse 72. By 8.30 p.m. she was half awake and making attempts to speak. At 10 p.m. she was able to speak and to answer questions, although still drowsy. At this point the methylamphetamine hydrochloride was discontinued.

During the next day she was somewhat drowsy, but rational and capable of answering questions. By the morning of October 31 she was fully recovered and later consented to have further mental hospital treatment as a voluntary patient.

Animal experiments conducted by Margolin *et al.* (1951) showed that the dose that killed 50% of test rodents (LD₅₀) varied from 600 to 900 mg. per kg. Recoveries in adult humans have been reported after ingestion of 6.25 g. (Bourne, 1954) and 8.75 g. (Lemere, 1952), but the single fatality on record is thought to have followed the ingestion of 4.5 to 6 g. (Cares *et al.*, 1953).

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Case of Fallot's Tetralogy with Multiple Congenital Abnormalities

The past decade has shown rapid advances in the understanding of congenital heart disease. The work of Blalock and Taussig (1945), Taussig (1948), and others has resulted in major progress in the surgical treatment of the three main conditions: pulmonary stenosis, patent ductus arteriosus, and coarctation of the aorta. An increasing number of other congenital conditions associated with morbus caeruleus are coming gradually to light. Thus, Campbell and Deuchar (1953), in a series of 200 cases of morbus caeruleus, found two cases of dextrocardia with complete situs inversus, one with isolated dextrocardia, and three with laevo-cardia plus transposition of abdominal viscera.

CASE REPORT

On February 10, 1953, an Indian boy aged 8 was brought to hospital. A typical history of a "blue baby" who had survived repeated attacks of endocarditis was elicited from his father. He had always been delicate and easily got dyspnoeic on moderate exertion. He was, however, able to attend school, where he had a good record. He could not take part in any games. He suffered frequently from attacks of cough, associated with high fever, and had some difficulty in swallowing. His appetite was poor. He had also suffered from abdominal discomfort associated with constipation. His present history was that of fever, cough, and severe dyspnoea, lasting for three days.

Clinical Findings.—He was rather thin and proportionally built, but somewhat small for his age. He walked into the examination room unaided with some effort. There were cyanosis of moderate degree and marked clubbing of fingers and toes; temperature 102° F. (38.9° C.), pulse 124, respirations 36; marked dyspnoea; multiple bilateral rhonchi in lungs. Heart: forceful, visible apex beat in fifth left interspace; a loud diffuse systolic murmur was heard along the left sternal border, maximal over the third and fourth left interspace, but audible also over a wide area on the front and back of the chest. Abdomen: soft, not tender, some fullness below umbilicus; spleen and liver not palpable. Rectal examination: hard faecal masses in ampulla.

A provisional diagnosis of pulmonary stenosis, probably a Fallot's tetralogy, complicated by infective endocarditis, was made. The father of the boy refused to have him admitted. Blood cultures could not be taken during the acute phase of the illness. Treatment and subsequent investigations had to be carried out in the out-patient department.

The acute symptoms subsided after a week of massive penicillin therapy and rest, making the following investigations possible.

X-ray films of the chest revealed a boot-shaped heart of normal size; replacement of aortic knuckle and pulmonary convexity on left upper cardiac margin by a concavity; dextroposition of aorta, being visible in two distinct cones within shadow of superior vena cava; marked passive pulmonary hyperaemia.

Blood picture: Polycythaemia, with Hb 108%; erythrocytes, 6,910,000; leucocytes, 9,400 (polymorphs 48%, lymphocytes 44%, monocytes 1%, eosinophils 7%).

Barium swallow examination was done to ascertain the relationship of the oesophagus to the great vessels (see Fig.).

Diagnosis.—These clinical, radiological, and haematological findings strongly suggested a diagnosis of Fallot's tetralogy—that is, pulmonary stenosis; dextraposition of aorta with widening, dextra-septal deviation, causing aorta to override septum; high ventricular septal defect resulting in a persistent venous-arterial shunt; right ventricular hypertrophy (Boyd, 1947). According to Mercer (1950), this dextraposition of the aorta is present in 25% of all cases of Fallot's tetralogy.

In view of the dextrogastrica, a complete radiological investigation of the gastro-intestinal tract was then carried out.

Barium meal examination revealed a situs partialis inversus: dextrogastrica; inversion of duodenum; position of duodeno-jejunal flexure not clearly seen; terminal ileum, caecum, appendix, and colon appear again in normal position. The appendix seems to have a rather wide lumen. In the left half of the transverse colon an area of early diverticulosis was discovered, extending as far as the splenic flexure. The affected segment showed fine spastic notching on the summits of the haustral bulges, described first by Spriggs (1929) to be characteristic of early diverticulosis. Barium-filled diverticula could be seen in the same segment after partial evacuation and after complete evacuation of the barium meal. The latter, as well as a subsequent barium enema, showed a megarectum. Sigmoid and rest of colon were of normal calibre.

Lastly, congenital absence of the left twelfth rib was found as a curious skeletal abnormality.

Barium swallow examination in Fallot's tetralogy: boot-shaped cardiac silhouette with concavity (C) at left upper margin; dextroposition of aorta seen in two cones (A); upper oesophagus lying to left of great vessels, being indented markedly on right margin by aorta (B); lower oesophagus deviating to right, indicating dextrogastrica.

COMMENT

The pulmonary stenosis in this case may not be very marked, as cyanosis was moderate and the degree of exercise-tolerance fair, even after several previous attacks of infective endocarditis. The abnormal findings in the gastro-intestinal tract may well explain the abdominal symptoms of this patient, bearing in mind that children with morbus caeruleus often suffer from digestive disturbances and put on weight rather slowly.

It may serve as a good example that in congenital heart disease multiple extracardiac congenital abnormalities can be expected, particularly within the thorax and abdomen.