INTERNAL STRANGULATION THROUGH AN APERTURE IN THE MESENTERY

BY

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Of the uncommon varieties of internal strangulation of the bowel probably that associated with a hiatus in the mesentery is the most seldom encountered, and in consequence few cases have been recorded. A married woman aged 33 who presented this unusual condition was admitted to the Rotherham General Hospital twenty hours after the onset of her symptoms.

Case Record

About 7 p.m. on the day before admission the patient was suddenly seized with severe abdominal pain which doubled her up. Nausea was present, but no vomiting occurred until after castor oil had been given a few hours later. The purgative aggravated her pains, and vomiting became frequent and distressing. Her symptoms were attributed to tinned fish which she had eaten a few hours before the onset of the pain, and food poisoning had been suggested. Colicky pains continued throughout the night and vomiting of brownish fluid persisted: the patient would experience an acute pain that doubled her up, this being followed by an abdominal rumble, with temporary relief. A movement of the bowels took place in the morning, faeces but no flatus being passed. By this time there had been a marked deterioration in the woman's general condition, and when again seen by her doctor an intra-abdominal catastrophe was suspected. She was sent into hospital with a diagnosis of internal haemorrhage on account of her marked pallor and rapid pulse.

Past History.—No dyspepsia had been experienced. On direct questioning the patient recalled vague abdominal discomfort during the past few months. The bowels had always been regular. Periods were normal, the last one having terminated a fortnight before admission. In addition to having three children she had had a four-months miscarriage in January, 1937.

Examination.—When examined the patient was in a collapsed state, with a definite cyanotic tinge showing through her pallor. The temperature was subnormal, the respirations 25 per minute, and the pulse 130. Systolic blood pressure was in the region of 90 mm. Hg. The abdomen was slightly distended and showed limited movements with respiration. Generalized abdominal tenderness was present, but the maximum tenderness was immediately above the umbilicus and towards the right iliac fossa, in both these areas some muscle-guarding being detected. Dullness was noted in the flanks. No tenderness was elicited in the pouch of Douglas and no intra-abdominal swelling could be palpated. The hernial orifices showed no abnormality. Examination of the urine revealed no sugar and no albumin. Taking into consideration (a) the symptoms and signs of acute intestinal obstruction, (b) the severe shock, (c) the absence of external herniae, a provisional diagnosis of acute internal strangulation was made, acute pancreatitis being considered as a secondary possibility.

Pre-operative Treatment.—For three-quarters of an hour before operation the patient was kept under a shock cage; during this time two pints of normal saline were given subcutaneously. One-quarter grain of morphine and 1/100 grain of scopolamine were administered hypodermically half an hour before leaving the ward.

Operation.—At 2 p.m., under local anaesthesia (novocain), the abdomen was opened through a right paramedian split-rectus incision, which extended an equal distance above and below the umbilical level. A large quantity of clear brownish fluid escaped on opening the peritoneal cavity. No fetor was present. The caecum was collapsed, and to its left side a mass of distended bowel could be palpated. On further investigation it was found that about four feet of the lower ileum

had passed, from below upwards, through a large defect in the terminal part of the mesentery. In addition the herniated ileum had undergone torsion in an anti-clockwise direction. The bowel was purple and tense; it was reduced without great difficulty and soon recovered its normal colour. It was noted that the hiatus in the mesentery lay between the ileo-colic artery and the lowest mesenteric branch. These arteries ran along the free margins of the opening, which extended up to near the site of origin of the ileo-colic artery. No attempt was made to close the gap, as this would have prolonged operation unduly. Accordingly, having relieved the strangulation and made certain the bowel was viable, the abdomen was closed in layers.

Diagram showing the position of the mesenteric hiatus.

Post-operative Treatment.—In addition to maintaining the body temperature a continuous intravenous saline drip was instituted, after having first given intravenously 20 c.cm. of 15 per cent. sodium chloride. The patient's general condition improved considerably, the pulse falling and improving in volume. There was no vomiting, and colicky pains no longer caused distress. The improvement was maintained for eight hours after operation, when a sudden collapse took place, the patient dying within a few minutes of the onset of the collapse. No permission for a necropsy was obtained.

Commentary

There are a number of interesting features about this case when it is considered not only from the point of view of the abnormality discovered but also from the clinical and pathological aspects in relation to acute intestinal obstruction. The way in which the ileo-colic and terminal mesenteric vessels lay actually along the free margins of the opening was striking; the appearance did not in any way suggest that trauma at an earlier date had caused a small primary tear in this area. There seems to be little doubt that the mesenteric aperture was congenital in origin.

Clinically, in the absence of external herniae the symptoms and signs of acute intestinal obstruction with superimposed shock suggested internal strangulation. The acute onset with rapid deterioration in the patient's condition, together with consideration of the maximum point of tenderness, made small-bowel strangulation a more likely possibility than a colon volvulus. The profound nature of the shock made one think that there was more than a mere knuckle of bowel strangulated. It is well known that acute pancreatitis may closely simulate acute intestinal obstruction, but when one bore in mind the age, sex, and build of this patient, together with the absence of antecedent dyspepsia and also the position of the maximum tenderness, acute pancreatitis became only a second possibility.

In previous recorded cases either the contents of the loop had to be aspirated to facilitate reduction or the condition of the loop had necessitated resection, in both instances thus removing the highly toxic contents of a closed loop. In this case such procedures were not needed to relieve the strangulation. Chloride deficiency and dehydration were made good, and before the fatal collapse the satisfactory progress suggested that the post-operative treatment was adequate. Unfortunately this proved to be incorrect. Where large loops have been strangulated, in addition to measures already mentioned a blood transfusion appears desirable in spite of initial satisfactory progress with chlorides and fluids alone. If such a transfusion be given after relief of strangulation it will provide the circulation with healthy blood capable of more effectively neutralizing toxins. It would be helpful to know whether routine aspiration of large strangulated loops to remove toxins which otherwise would be absorbed with the restoration of loop circulation gives the patient a better chance of recovery.

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THE INCIDENCE OF UNEQUAL PUPILS IN UNCONVICTED PRISONERS *

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The incidence of inequality of the pupils in pathological states and as a physiological anomaly is generally recognized. Collier and Adie (1926) say: "Inequality of the pupils occurs in connexion with all nuclear and peripheral ocular paralyses, and with cervical sympathetic paralysis. It accompanies all defects of vision from lesions of the visual path between the eye and the external geniculate bodies, provided the appreciation of light be unequal in the two eyes. It may be congenital or associated with inequalities of the refraction of the two eyes, and then has no pathological significance. It is commonly a sign of nervous syphilis." French (1936), writing on the same subject, declares: "Inequality in the size of the pupils is observed frequently and may have no pathological significance. . . . In cases of marked inequality of the pupils one may suspect tabes, general paralysis of the insane, a unilateral lesion of the third nerve or cervical sympathetic, trigeminal neuralgia, carotid or aortic aneurysm, a unilateral intracranial lesion, or glaucoma." Firth (1914) states: "Anisocoria without impairment of the pupillary reactions is not necessarily a serious symptom, for it may occur in healthy persons. Here the difference is usually not more than half a millimetre, and rarely as much as one millimetre; the inequality persists in all states of illumination and convergence. Inequality associated with change of the pupil reactions may be taken as evidence of an organic lesion."

The significance of anisocoria as an indication of mental disorder in medico-legal cases may be uncertain unless the cerebrospinal fluid is examined; but the medical officer is seldom in a position to urge this if the accused is charged

with a minor offence and appears to be mentally normal. It therefore seemed desirable to investigate the matter further, and 3,000 men received into Brixton Prison were examined to ascertain the proportion of cases presenting anisocoria and to determine its relative frequency in the group when associated with declared organic nervous disease or mental disorder. For this purpose comprehensive notes were made on the history of each case, with particular reference to venereal disease, nervous and mental disease, head and eye injuries, and other relevant factors. A physical examination of the various systems followed, with ophthalmoscopic examinations and tests for errors of refraction. The subjects were also examined in regard to their mental conditions. All cases of anisocoria were examined on the evening of their reception and again the following morning. In many cases the inequality noted overnight was no longer present at the second examination. This was found to apply to cases of minor and major degrees of inequality. The total number of cases showing anisocoria on reception was 576. Of these, 281 (48.8 per cent.) were rejected on subsequent examination on account of the transient nature of the inequality. This could not be attributed to any difference in light intensity, and it was thought that fatigue was probably the determining factor. In the evenings the pupillary reaction was less sensitive, the pupils somewhat more dilated, and consequently any inequality more marked.

There can be little doubt that anisocoria, particularly if non-pathological, is subject to considerable variation, and pupils which at one period are definitely unequal may at other times be equal. This applies also, to a lesser extent, in cases of anisocoria associated with disease of the nervous system. In this connexion Firth (1914) states: "Inequality of the pupils occurs in many organic nervous diseases, and also in functional disorders: the condition may be transient, constant, or subject to change. The degree of anisocoria may vary from day to day, even from hour to hour."

Method of Classification

Of the total cases examined 295 (9.8 per cent.) were found to have persistent anisocoria. They have been classified into three groups, according to the degree of inequality and which pupil was the larger:

Left Pupil					Right Pupil				
110 +	..	..	..	..	..	75 +			
54 ++	..	..	..	..	..	41 ++			
9 +++	..	..	..	..	..	6 +++			
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173					122				

Conditions Associated with Anisocoria

Thirty of the cases gave a history of syphilis: four of these were diagnosed as suffering from general paralysis of the insane; seven showed other signs of neurosyphilis; and in five the pupillary reactions were abnormal without other clinical evidence of neurosyphilis. There was apparently no clinical relation between the stage of the disease and the degree of inequality. In the remaining fourteen cases there were no clinical signs of syphilitic disease of the nervous system. In one case of neurosyphilis with marked pupillary inequality the condition was congenital. In another case, with a history of syphilis but without signs of any specific lesion, the inequality was due to an accident, in which the patient had been struck a blow on the eye, with subsequent retinal degeneration.

Inequality of the pupil may be present with only a slight modification of the pupillary reflexes in early cases of neurosyphilis. It may be the first ocular sign and one of the earliest indications of the involvement of the nervous system. There can be little doubt that anisocoria associated with changes in the pupillary reaction invariably indicates a definite organic lesion, and is often accompanied by other signs of the disease. Cowen (1902), refer-

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