REMARKS

ON

WANDERING SPLEENS.

A Paper read before the Medical Society of London.

By J. BLAND SUTTON, F.R.C.S.,

Surgeon to the Chelsea Hospital for Women; Assistant-Surgeon to the Middlesex Hospital.

THE epithet "wandering" has been applied to organs unduly mobile, the common examples being wandering kidney and a wandering goitre; in none is the term so well deserved as in the case of a very movable spleen. In a well-marked instance this organ is capable of such free excursions that it may be brought into contact with every part of the celom (general peritoneal cavity) from the diaphragm to the floor of the pelvis. It is difficult to conceive that a viscus like the spleen, suspended by peritoneum to the under surface of the diaphragm, connected to the great *cul-de-sac* of the stomach by means of the gastro-splenic omentum, and by its blood vessels brought into intimate bondage with the pancreas, could so elongate its attachments as to reach the fundus of the virgin uterus.

It is not my intention to offer any speculations on the manner in which this undue mobility is acquired, but merely to refer to the leading facts which have been ascertained in regard to prodigal spleens, to indicate the evil consequences which arise out of their wanderings, the mischief they set up in certain organs with which they come in contact, the difficulty they occasion in diagnosis, the astonishment which follows their discovery in the operating theatre or the *post-mortem* room, and the disasters wandering spleens may entail upon their owners.

It is interesting to observe the positions assumed by a wandering spleen. Occasionally it will occupy the normal position, and remain for days retired under cover of the left costal arch; then suddenly it slips out, and becomes obvious to the patient in the umbilical or iliac regions; then it will descend into the pelvis, and its presence there is determinable only by deep pressure of the fingers over the hypogastric region, or by vaginal examination. Although gravity exercises some influence in determining the sinking of the spleen into the pelvis, its position in the belly does not always appear to be due to this cause. In one case, especially, I was able to determine on several occasions that when the spleen was very mobile and the patient turned on to her right side, this viscus sometimes fell into the right iliac fossa, but it would quite as often move to the left side, as though carried on by the intestines, like a boat on the crest of a billow. I am at a loss as to any suggestion as to the cause of these vagaries, but they are very similar to those characteristic of movable kidney; mobile kidneys, however, never exhibit such extensive excursions as wandering spleens.

In considering the many remarkable changes of position to which abdominal tumours, as well as mobile viscera are liable, it is well to bear in mind that the statics of vital bodies freely projecting into a vacuum like the celom, and subject to many forces apart from mere alteration in the position of the individual, is a subject which has never been adequately investigated. It is, however, important to bear in mind that there is no change which disturbs the abdominal viscera so much and leaves such traces as pregnancy, and it is noteworthy that wandering spleens are almost, but not exclusively, confined to women, and in the majority of cases the individuals have had children. This statement holds good not only for clinical examples, but also for those discovered after death.

THE EFFECTS OF WANDERING ON THE SPLEEN.

(a) *Engorgement.*—As the structure of the spleen, even when the organ rests in its normal position, is one eminently favourable to the occurrence of engorgement, it is obviously more liable to over-distension when pendulous at the end of a long stalk formed by the elongated splenic artery and vein and gastro-splenic omentum. The extent to which the spleen may become distended will be gathered from the following observation. A wandering spleen, when lying in the belly,

extended from the floor of the pelvis to a point midway between the umbilicus and the ensiform cartilage. When removed from the body it contracted so rapidly that in fifteen minutes its greatest length was 15 cm. (6 inches), and weighed half a kilogramme. It was left for six hours in a vessel of cold water, and when *rigor mortis* was well pronounced the spleen scarcely exceeded its normal size. This remarkable contractility of the spleen I was able to study closely in a girl during a splenectomy. The spleen reached from the diaphragm to the uterus, and when exposed through an incision in the belly wall looked a very formidable object. It was withdrawn carefully, and unwilling to sacrifice such a large quantity of blood I had the spleen gently supported by an assistant for a few minutes. Exposure to the air acted as a powerful stimulant, and the contraction was so obvious that, whilst we watched, this enormous spleen shrank one-third of its original bulk. We really witnessed a splenic systole.

(b) *Axial Rotation.*—Apart from the facility with which a wandering spleen becomes overcharged with blood, its blood-holding capacity comes out even more markedly when the organ spins on its axis and twists the pedicle; then the thin-walled veins become compressed before the current is arrested in the more resilient artery, with the result that the spleen is so replete with blood that it looks as if only too ready to burst.

(c) *Atrophy.*—When a wandering spleen undergoes axial rotation the same severe symptoms arise as are met with in acute rotation of ovarian cysts and strangulated hernia. When the rotation is so acute as to completely arrest the circulation in the spleen, and persists it will lead to permanent occlusion of the splenic artery and vein. Obliteration of the splenic artery involves atrophy of the spleen, a fact demonstrated by Rokitsky in his classical paper dealing with the axial rotation of abdominal tumours and viscera (1859).

THE EFFECTS OF A WANDERING SPLEEN ON NEIGHBOURING

VISCERA.

(a) *The Pancreas.*—When we consider the intimate relation of the spleen to the tail of the pancreas, it is certainly to be expected that some disturbance of the gland would arise from elongation of the splenic pedicle; in some cases the pancreas remains undisturbed, but in others it has been incorporated in the pedicle. In one case reported by Rokitsky the pancreas was pulled out till it measured 25 cm. (10 inches), and formed part of a twisted pedicle, making three turns around the artery. Richelot removed a spleen which had tumbled into the pelvis and dragged the tail of the pancreas with it; the gland was so incorporated with the pedicle that pancreatic tissue was included in the ligature. I have had a similar experience.

(b) *The Stomach, Duodenum, and Gall Bladder.*—The dragging of a wandering spleen upon the stomach leads to uncomfortable gastric effects, such as dilatation of the stomach, accompanied by fermentation of food and vomiting. Occasionally the tension upon the stomach and duodenum interferes with the common bile duct and leads to frequent recurrent attacks of severe jaundice.

(c) *Intestines.*—It can easily be imagined that the long cord-like pedicle of a pendulous spleen would be very liable to interfere with the intestines, and cases are on record in which wandering spleens have been found adherent to small intestine, colon, sigmoid flexure, and the vermiform appendix. Adhesions of this character, apart from their liability to cause intestinal obstruction, are unpleasant because such unions lead to damage of the intestinal wall, which may favour the emigration of bowel contents charged as usual with micro-organisms, and thus initiate the formation of pus with all its evil consequences, and, the most serious of all, septic peritonitis.

(d) *The Uterus.*—Perhaps the least suspected damage which a wandering spleen may cause is acute retroflexion and even prolapse of the uterus. All wandering spleens tend to drop into the pelvis; in two patients I have been able to demonstrate that the weight of the spleen has doubled the uterus on itself, and in one woman the retroflexion thus caused has been a source of great inconvenience. Kouwer has published details of a case in which a pelvic spleen caused complete prolapse of the uterus, the vagina, and the bladder. The

Pressure of an organ like the spleen on the uterus not only mechanically interferes with the uterus but seriously disturbs menstruation.

DANGER TO LIFE.

It will be gathered from what has been stated in the foregoing sections that a wandering spleen may, and occasionally does, jeopardise life. The dangers are:

- (1) Rupture of stomach or duodenum.
- (2) Intestinal obstruction.
- (3) Abscess of spleen.
- (4) Rupture of spleen.

DIAGNOSIS.

In writings dealing with the diagnosis of abdominal tumours, enlargement of the spleen is always taken into account, but wandering spleens are not mentioned. As a consequence a misplaced spleen is rarely recognised until the abdomen is opened in the operating theatre or *post-mortem* room.

Wandering spleens have been confounded with many kinds of abdominal tumours, such as ovarian cysts, renal tumours, malignant tumours of the omentum, movable kidneys, and uterine myomata. The tendency of such spleens to seek the pelvis, their shape and firmness, combined with the disturbance their presence in the uterus causes to menstruation, has led them to be mistaken for uterine myomata in many instances. Perhaps the most curious of all is a case reported from Spain, in which coeliotomy was performed for the relief of trouble due to the presence of a tumour in the pelvis. The tumour was successfully removed under the impression that it was a uterine myoma, impacted and adherent to the pelvis and adjacent structures. When fragments of the supposed myoma were submitted to microscopic examination it proved to be a spleen.

Körte reported a case in which a woman was seized with pelvic pain after a lying-in. The physician in charge of the case detected a tumour low in the belly, and as the urine was diminished in quantity, he regarded the tumour as a "wandering kidney." Signs of internal strangulation arose, and Körte saw the case and punctured the tumour, but only blood escaped. The patient died with signs of intestinal obstruction and peritonitis. At the *post-mortem* examination a spleen was found in the pelvis; it had obstructed a loop of intestine.

It is necessary to bear in mind that ovarian and uterine tumours may closely simulate wandering spleens. For instance, a married woman, 35 years of age, was admitted into the Chelsea Hospital for Women complaining of a swelling which she had noticed eight years. The tumour was in shape like a spleen minus the notches. It occupied the right iliac region, but could be transported into every region of the abdomen without causing pain or discomfort. No area of splenic dulness could be made out in the normal situation of the spleen. The pelvic viscera were apparently normal. The blood corpuscles were normal in shape and in their numerical proportions. The tumour was liable to variations of volume. After deliberate consultation operation was decided upon. When the abdomen was opened a dark red mass, with a wrinkled capsule and in shape like a spleen, was exposed, and it was not until I had passed my hand into the left hypochondrium that I satisfied the on-lookers that it was not a spleen. It proved to be a pedunculated uterine myoma; its stalk was no bigger than my index finger, and contained a very large vein. I have little doubt that the variations in volume of the tumour were due to partial tension and torsion of the pedicle. The myoma (weighing $2\frac{1}{2}$ kilograms) was removed, and the patient recovered.

Three months later a girl, aged 14 years, was admitted with a very large abdominal tumour, associated with free fluid. She was kept in bed for several days, and as the fluid slowly absorbed the tumour became more defined. It floated on the intestine, and lay obliquely across the left side of the belly, its upper end reaching to the left hypochondrium. Nothing abnormal was made out on pelvic examination. The splenic area was resonant, and the tumour had the shape and presented the notched border so characteristic of the spleen. The blood corpuscles were normal in number and proportion. It was regarded as an enlarged and wandering spleen. An incision was made in the left linea semilunaris, and a multi-

locular ovarian cyst was found, partially collapsed from rupture of its largest loculus, floating on the bowels. The secondary cysts gave rise to the deceitful sensation of splenic notches. The tumour, which originated in the right ovary, was removed through the incision in the left linea semilunaris. The girl made an uneventful recovery.

REMARKS.

Splenectomy for wandering spleen is not only justifiable but it is a highly successful operation, the rate of recovery being equal to that of ovariectomy in skilled hands. I have succeeded in collecting a score of cases performed within the last twenty years without a death. It has, of course, occurred to many that it would be desirable if it were possible to secure the spleen in the left hypochondrium by means similar to those adopted for movable kidney. Pouwer has endeavoured to carry this out in two instances, but his results show clearly that the patients ran much greater risks and had a longer confinement to bed than if he had removed their spleens.

Ridgier has conceived and carried out, apparently with success, an ingenious and simple method which seems full of promise.

The great difference between splenectomy and splenopexy is that in the former case the individual is deprived of an organ, and, although we do not know with any degree of precision what its real use is, we are nevertheless bound to display caution in dealing with it.

So far as my own cases go I have failed to find any evil manifestations. I regard the spleen as a highly developed and specialised lymph gland, and at present there seems to be no reason for hesitating to remove it when "wandering" and troublesome in so far as remote consequences are concerned, than in excising a crowd of enlarged glandulæ concatenatæ.

It is a fact that many, if not all, individuals with a wandering spleen are very thin and often gaunt, and as far as my observations go, they retain this character when spleenless.

SPLENECTOMY FOR PROLAPSE OF THE SPLEEN THROUGH A PERFORATING WOUND OF THE ABDOMEN: RECOVERY.

By E. HAROLD BROWN, M.D.,

Surgeon-Captain, I.M.S., Civil Surgeon, Darbhanga.

PREVIOUS HISTORY.

ON May 7th, when inspecting a dispensary in the Darbhanga District, the assistant-surgeon in charge drew my attention to a patient who had been under treatment for three weeks. I was told that the man in question, a powerful, well-built Rajput, aged 35, had been attacked by a wild boar, who knocked him over, and ripped open the left side of the abdomen. On being brought to the dispensary a few hours later he was found to have a large oblique wound extending in the axillary line from just above the tenth rib to a point half an inch above the crest of the ileum. Through this a solid organ had prolapsed, which the assistant-surgeon considered to be the liver, though on the left side; but, he said, the size, shape, and colour of the organ left no doubt in his mind as to its identity. He attempted to reduce it, but failed, so left it outside the body, and, three weeks later, I saw the case. I differed from the opinion which had been expressed, having no doubt that the spleen, much enlarged, was the organ which had prolapsed; but the assistant-surgeon defended his original diagnosis, maintaining that, having seen the case a few hours after the accident, he had no difficulty in recognising the liver as the organ which had prolapsed, its right and left lobes being perfectly characteristic, while the size and colour of the organ were distinctive. I adhered to my own opinion, however, especially as percussion revealed the fact that the liver was in its normal position on the right side, while the heart's impulse was visible in the fifth left interspace; and explained to my assistant that we were examining an enlarged and congested spleen; but he refused to be convinced.

I accordingly directed him to send the patient to the Raj