

painted on the wound there was nothing to note in the treatment. In spite of a smart attack of remittent fever with splenic enlargement the wound was firmly closed on Nov. 5th. The only trouble after this was incontinence of urine which persisted for some days. The patient was discharged from the hospital in very good condition four or five weeks later.

In conclusion, it may be remarked that in native villages in this country almost the only accidents to children arise from falls from the flat roofs which are quite unprotected. In this case, as already stated, the child fell fully 12 feet.

Ramallah, Palestine.

#### NOTE ON A METHOD OF EXTENSION OF THE "GRIDIRON" OPERATION FOR APPENDICITIS WITHOUT DIVIDING MUSCLE FIBRES.

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VERY occasionally the classical muscle-splitting operation unexpectedly fails to provide sufficient room. The following is a method which I have several times adopted of extending the area and which I have not seen described elsewhere. On such occasions the tendon of the external oblique is by a few touches of the knife separated from that of the internal oblique, where these begin to blend together for the formation of the sheath of the rectus, to well beyond the outer edge of the rectus and then retracted inwards; the line of splitting of the internal oblique and transversalis muscle is then carried on through their tendons well on to the rectus sheath for an inch or so; the remaining part of the anterior sheath of the rectus is then divided upwards, or downwards, whichever be desired, as far as is necessary; the rectus is then displaced inwards and the posterior sheath is similarly divided in a vertical direction, in a line a full inch nearer the middle line than the site of the outer border of the muscle. The triangular flap thus obtained is displaced outwards and downwards (or outwards and upwards, as the case may be). The incision in the peritoneum is easily extended to any desired point in the line of original incision and very free access is obtained. This method takes but a few minutes but its chief advantages are only obvious when the layers are severally united by sutures. When the posterior sheath of the rectus has been sutured, the rectus muscle secured by a few points in its original bed, and the anterior sheath similarly united, the internal oblique and the transversalis muscles will be found accurately lying together in the line in which they were split; the external oblique, of course, comes together without the least difficulty. In this way there has been no division of muscle fibres and the nerve- and blood-supplies to the rectus are practically untouched. The method provides precisely the same security against hernia as does the less extensive classical "gridiron" operation, a matter that cannot be overrated in young men. Drainage, if necessary, is made through a separate wound. I have used this method where a small localised abscess within omental adhesions due to a perforated appendix was found firmly glued to the posterior surface of the symphysis pubis and quite recently where an unusually long appendix was adherent by its tip behind the ascending colon close to the hepatic flexure, as well as in other less difficult cases. I quite recently saw in the dissecting room an appendix adherent throughout its whole length in front of the ascending colon, the tip lying actually on the hepatic flexure. Operating surgeons must necessarily have experienced many similar instances. I would emphasise that the method has only been used for those cases where the abdomen has already been opened by McBurney's incision and where investigation has shown that unexpectedly much more room is necessary and it is in no way recommended to take the place of a "right semilunar" incision. This method of extension of the "gridiron" operation can be demonstrated very easily on the cadaver.

I would add that Lennander's method of displacing the rectus *outwards* after a "right semilunar" incision is far preferable to that in which it is displaced *inwards*, as by the former absolutely no interference with either blood- or nerve-supply is risked.

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## A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

*Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.*—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Prooemium.

### LEEDS GENERAL INFIRMARY.

TWO CASES OF DOUBLE MALIGNANT TUMOURS OF THE  
INTESTINES.

(Under the care of Mr. A. W. MAYO ROBSON, Dr. C. M. CHADWICK, and Mr. R. LAW FORD KNAGGS.)

CASE 1.—A man, aged 35 years, was admitted under the care of Mr. A. W. Mayo Robson to the Leeds General Infirmary on May 27th, 1902, with symptoms of chronic intestinal obstruction. These had commenced in December, 1901, and he had lost three stones in weight. No tumour could be felt in the abdomen and on examination the rectum was found to be healthy. At the operation on May 29th a stricture, causing almost complete obliteration of the lumen of the bowel, was found about the middle of the ileum. It was excised and end-to-end anastomosis was performed. No secondary deposits were seen. The growth (No. 2529 C in the Museum of the Royal College of Surgeons of England) is described as a portion of jejunum "which was excised for the close stricture shown, the constriction being due to the shrinkage accompanying the growth of a carcinoma which has invaded the muscular wall and advanced into the tissues beyond." It was obviously a carcinoma but no microscopical examination had been made as the interest of the specimen lay in the tightness of the stricture. The patient was readmitted on July 29th, 1904, under the care of Mr. R. Lawford Knaggs. He had had good health since the operation till about five weeks before, when he began to suffer pain in the sacral and left iliac regions and had experienced some difficulty with his bowels. In the scar of the old incision there were two hard masses. One at the upper end was as large as a walnut and involved the deeper structures of the abdominal wall. The other at the lower end was larger and felt as if it were not limited to the parietes but extended to parts beneath. Within the rectum, two inches from the anus, the finger impinged on a raised mass on the anterior wall which proved to be the indurated edge of an excavated ulcer large enough to lodge the terminal phalanx of the examining finger. The ulcer was about three-quarters of an inch deep. The mass was firmly fixed to the parts in front of the bowel. Several enlarged and hard glands could be felt between the sacrum and the posterior wall of the bowel and both glands and the posterior bowel wall felt tethered to the bone. Examination was not painful. A left lumbar colotomy was performed on August 2nd and the patient went home on the 17th.

CASE 2.—A man, aged 27 years, was admitted to the Leeds General Infirmary on Nov. 26th, 1903, under the care of Dr. C. M. Chadwick for an enlarged liver and a malignant growth in the rectum. He had suffered from typhoid fever when he was 21 years of age. In July, 1903, he began to have diarrhoea and to lose flesh. He had had "hæmorrhoids" for the last 12 months. He suffered from constant pain in the sacral region and the tenesmus was so distressing that he was transferred to the surgical wards and inguinal colotomy was performed to lessen his sufferings. He died two or three weeks later on Dec. 21st.

*Necropsy.*—The stomach appeared to be "trifid." On laying it open, however, it was found that the appearance was caused by a polypoid growth involving and distending the parts in the region of the pylorus. With regard to the rectum and the anus, there was a mass of growth (ulcerating) at the lower end of the rectum involving the anal mucous membrane and the skin about the anus. There was another growth constricting the gut just below the colotomy wound. The mucous membrane between these growths presented a curious polypoid appearance. Otherwise the intestines were normal. The liver weighed 12 pounds. There were weak

adhesions to structures in the neighbourhood. The surface showed several large umbilicated growths of a cream colour. On section almost the whole of the liver was seen to be occupied by large masses of secondary growths uniformly distributed. The gall-bladder was normal. The pancreas, the spleen, the kidneys, and the thoracic viscera were normal.

The microscopical examination of the different tumours may be briefly stated. The stomach growth was an adenoma. There was an overgrowth of glandular tissue but the arrangement was regular and nowhere showed any tendency to invade the muscular layer. The polypoid projections on the rectal mucous membrane were also adenomatous in character; in some places the glandular cells showed a disposition to proliferate. Both here and in the stomach there was evidence of inflammatory infiltration. Both upper and lower rectal growths were columnar carcinomata. The secondary growths in the liver were also columnar carcinomata.

*Remarks by Mr. LAWFORD KNAGGS and Dr. O. C. GRUNER.*—It has been already stated that the polypoid condition of the rectum was limited to the tract between the two growths and that the mucous membrane was healthy above the upper one. This fact would seem to point to the development of the "polyposis" subsequently to the formation of the upper growth. And if this inference is correct the altered condition of the mucous membrane was due to influences introduced by that growth. At the anal extremity of the rectum the polypoid mucous membrane gave place to another carcinomatous tumour. Which of the two malignant growths was the first to make its appearance? The microscopic appearances are if anything rather in favour of regarding the upper one as the older of the two; the fact we have alluded to in connexion with the limitation of the polyposis would tend to confirm this view. Further assistance may be derived from the probable origin of the anal growth. It is impossible not to associate that origin with the polypoid state of the mucous membrane. Where the irritation is naturally greatest—viz., at the anus—the proliferating glandular tissue has invaded the muscular layer and assumed the malignant type. A polypoid projection can be seen merging into the malignant tissue but the actual starting point of the malignant change cannot now be determined. The growth is too extensive.

What was the cause of the polyposis? Irritation or passive congestion? The only form of irritation that suggests itself is the passage of fæces retained above the stricture until they had become foul and offensive but if this had been the cause we should expect the intestine above the stricture also to have been affected. On the other hand, passive congestion was not unlikely to be produced by the constriction of the growth and its extension to the glands and lymphatics in the mesorectum. Unfortunately we have no post-mortem observation as to the implication of these glands.

The innocent character of the stomach tumour is clear. It cannot, therefore, be regarded as a secondary or metastatic growth. But it is undoubtedly the result of chronic inflammation and it is situated at the pyloric end where malignant disease most commonly occurs. Of the goal towards which it was tending there can be little doubt when the conditions connected with the anal growth are borne in mind. The term "pre-cancerous" may be fairly applied to it. The only possible connexion that it may have had with the rectal growth is through the dyspepsia which obstruction may have caused. We are unable to express an opinion as to whether the secondary growths in the liver were derived from one or both rectal growths.

Finally, our conclusions may be stated as follows: (1) There existed a tendency to cell proliferation and hypertrophy in parts of the gastro-intestinal tract when inflammation was excited; (2) the stomach growth was a direct result of this tendency and was not malignant; (3) the upper rectal growth was probably the primary disease; (4) the polypoid state of the rectum was in some way due to the presence of this upper growth; (5) the lower rectal growth was due to the simple tumours and the mucous membrane from which they arose developing malignant tendencies as a result of the anal irritation (it was independent of the upper growth and in no sense a "secondary" or metastatic tumour); and (6) the liver deposits were secondary to one or both of the rectal growths.

*Microscopic report by Dr. GRUNER.*—1. The stomach. The polypoid condition was preceded by a rather oedematous condition of the gastric mucous membrane with some rounded infiltration around the orifices of the glands. Near

the hypertrophic portion the round cells became very abundant and there were even small accumulations like minute abscesses here and there in the submucosa. The polypoid portion showed long villous-like outgrowths covered by shrunken columnar epithelial cells. This appearance was continued all along the papillary mass. There was not the least tendency to ingrowth into muscular tissue. 2. The polypoid rectal mucous membrane. This consisted of numerous glandular elements lying in a very scanty vascular stroma. The cells lining the glands had the normal columnar shape but some of them exhibited a large number of superimposed nuclei, while other adjacent glands showed only a single layer of lining epithelium. This suggested something more than mere chance obliquity of section across the glands—namely, proliferative processes in the former glands. Many of the glandular cells showed much increase in their mucin content and in some places this was so abundant as to cause great distortion of the glands. There was no evidence of malignancy. 3. The lower rectal growth. As the mucous membrane was traced from above towards the growth the glandular elements were seen progressively to increase their proliferative tendencies until at the seat of growth the gland acini were actually embedded in groups of muscle fibres constituting true columnar-celled carcinoma. The cells lining these glands were more cubical in shape than were those lining the glands of the mucous membrane above and they did not show excess of mucin. Where the proliferation of mucous membrane was commencing there was definite evidence of inflammation in the inter-glandular connective tissue. 4. Upper rectal growth. The mucous membrane in the immediate vicinity of this growth was much more oedematous than that in the lower growth, the glandular elements being widely separated by a very loose connective tissue in which there was great accumulation of leucocytes. This inflammation extended no deeper into the intestinal walls than the mucous coat, and the outskirts of the growth had merely the aspect of overgrown glands without any tendency to invasion of tissue. This portion of the tissue passed continuously but rapidly into true columnar-celled carcinoma. The gland spaces in this growth were large, in marked contrast to those in the lower growth. The cavities were filled with mucoid material and the lining cells were distorted, presumably from the over-production of mucin. The portions in the deepest parts of the growth showed tracts of dead cells amongst the carcinoma acini. There was not much fibrous tissue around the growth. 5. The liver. The liver substance in the neighbourhood of the secondary growths was profoundly altered. The vessels were surcharged with blood, the liver trabeculæ were attenuated, and the cells had lost their shape for some considerable distance away from the growth. There was, however, little cellular exudate from the vessels. The growth had the characters of a columnar-celled carcinoma resembling the rectal growths but not showing such large spaces as were seen in the upper one of the two. The cells were, however, much shrunken and the interstitial tissue was very loose. It would be impossible to state whether the secondary growths in the liver arose from one rectal growth more than the other but the stage of growth which each of the three growths presented showed that the secondary growths (the last to appear) were more like the lower rectal growth, which would thus be more recent in origin than the upper one (the gland spaces of which had become much larger and showed degenerative processes).

## POLICE HOSPITAL, BANGKOK, SIAM.

A CASE OF LIGATURE OF THE LEFT SUBCLAVIAN ARTERY.

(Under the care of Dr. H. CAMPBELL HIGHET.)

THE patient in this case was a young man, a Siamese, who was admitted into the Police Hospital, Bangkok, Siam, in August with a fishing trident firmly embedded in the muscles around the front of the left shoulder. Mr. E. A. Bryan, the hospital assistant, finding that the prongs of the trident were too firmly fixed to be easily removed, administered chloroform and with much difficulty and some enlargement of the wounds extracted the weapon. This proved to consist of three prongs, each four and a half inches long, three-sixteenths of an inch in diameter, and furnished at about an inch from the point with a strong barb one quarter of an inch long. The three points formed an equilateral triangle, each point being one