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ADULT SURGICAL DISORDERS ENCOUNTERED IN CHILDREN

S. E. O'BRIEN, M.D., F.R.C.S.[C],
Hamilton, Ont.

THE PURPOSE of this paper is to point out the occurrence, though admittedly uncommon, of lesions occurring in children that are usually encountered only in abdominal surgery of adult patients. This will be demonstrated by the case reports of three patients seen in the author's practice in a one-year period.

CASE 1.—W.S., a 16-year-old girl, was admitted to hospital on January 13, 1960, complaining of abdominal pain of three days' duration.The pain was colicky in nature and gradually increased in severity. It was located mainly in the hypogastrium. She had no nausea or vomiting and her appetite remained good. Her bowels moved normally up to the day of admission and there was no history of bleeding per rectum.

On admission the girl was moderately ill, with a temperature of 100° F. and a pulse rate of 100 per minute. The abdomen was not distended. There was acute tenderness in the lower abdomen, greatest in the suprapubic area. The lower abdomen was quite rigid and rebound tenderness was present. No masses could be palpated and no bowel sounds could be heard. There were no hernias.

Rectal examination revealed a firm tender mass anteriorly in the pelvis, above the uterus.

An admission diagnosis of pelvic peritonitis secondary to acute appendicitis or a twisted ovarian cyst was made, and a laparotomy performed shortly after admission.

At operation a firm mass was found occupying the pouch of Douglas, and lightly adherent to the back of the uterus. This mass was about the size of a golf ball or a little larger and was located in the sigmoid colon. The mass was firm in consistence and appeared to be of an inflammatory nature with an area of necrosis on the serosal surface measuring 2 cm. in diameter.

On the assumption that this was an inflammatory mass, possibly secondary to foreign body perforation, the sigmoid was mobilized and the involved segment exteriorized. The lesion was excised, leaving a double-barrelled colostomy. Much to our surprise the pathologist reported this lesion to be a moderately well differentiated adenocarcinoma of the colon.

Because this was not considered to be an adequate cancer operation, the patient was returned to the operating room on February 5, 1960, and the colostomy, along with the remaining sigmoid and descending colon and their mesentery, was resected, dividing the inferior mesenteric artery close to the aorta. An end-to-end anastomosis was then made between the splenic flexure and the upper rectum. The liver was found to be free of metastases at this operation.

The patient made an uneventful recovery and was discharged from hospital on February 17, 1960. The pathologist could find no evidence of residual tumour in the colon or its mesentery. Subsequent sigmoidoscopic examination and barium enema revealed no evidence of polyps or other lesions in the large bowel.

The patient remained well eight months later.

DISCUSSION

Although benign adenomas and polyps of the colon and rectum are common in children, carcinoma is most uncommon under the age of 20. A recent review of the literature reveals 189 cases of carcinoma of the rectum and over 80 cases of carcinoma of the colon reported in patients under the age of 20 years.[1] It is said that the prognosis in these patients is extremely poor because these tumours are of a high grade of malignancy, and local extension, lymph node involvement, or distant metastases are common findings at operation. To date no five-year survivals have been reported under the age of 16 and only two cases have been reported between the ages of 16 and 20. The longest survival on record is of an 18-year-old boy who survived eight years and in whom one mesenteric lymph gland contained metastatic disease. The youngest patient in whom carcinoma of the colon has been reported is a 9-month-old female infant with carcinoma of the descending colon.

As in adults, the commonest site for the lesion is in the rectum, the sigmoid being the next commonest. The pathology is similar to that of the adult lesion, with the one exception that mucoid carcinoma accounts for 50% in the younger group and only 5% in the adult.

The clinical picture in the young patient, however, is somewhat different from that in the adult. The commonest symptom is abdominal pain, which is frequently vague and generalized; and rectal bleeding is considered to be uncommon. Many of these young patients are operated upon for appendicitis, either acute or chronic, and frequently the tumour is missed and a normal appendix is removed. It is only after continued trouble that the diagnosis is finally made, usually at a stage when the disease is incurable. It has been emphasized that when the appendix is normal the bowel should be carefully examined for these uncommon tumours. Unfortunately this is usually impossible through a McBurney's incision.

One might expect that a large number of these patients with carcinoma of the colon under the age of 20 would be persons with familial multiple polyposis or ulcerative colitis, as these diseases are associated with malignant complications at an early age. However, Chappell,[2] in a review of 88 cases of carcinoma of the colon in patients under the age of 20, found only seven in patients with ulcerative colitis and none in patients with polyposis. It is also pointed out that malignant degeneration of a solitary polyp is extremely rare.

The treatment of carcinoma of the colon in young patients differs in no way from the treatment in the adult cases.

CASE 2.—B.G., a 15-year-old boy, was admitted to hospital on January 6, 1960, with severe epigastric pain of three or four hours' duration. This pain was steady in nature, did not radiate, and was not relieved by meperidine (Demerol), 50 mg. It was partially relieved when the patient sat up and leaned forward. He had vomited two or three times since the onset of pain. Bowel movements had been quite regular and there was no history of jaundice.

Over the previous two years he had experienced several milder attacks of upper abdominal pain and vomiting, not particularly related to meals or any specific food.

On admission the patient was an acutely ill, extremely obese boy weighing about 212 lb. His skin was pale but there was no evidence of jaundice. Pulse rate was 70 per minute and blood pressure 150/90 mm. Hg. The heart and chest were normal. His abdomen was quite obese but not distended. Acute tenderness was noted in the epigastrium, with rebound tenderness across the upper abdomen. There was no rigidity of the abdominal wall and no masses could be palpated. Bowel sounds were absent. Rectal examination was normal.

White blood cell count was 22,300 per c.mm. and serum amylase value was 755 units. A plain radiograph of the abdomen revealed no free air under the diaphragm, and no other abnormalities were noted.

A provisional diagnosis of acute pancreatitis was made and conservative therapy, including gastric suction and administration of intravenous fluids, sedation and methantheline bromide (Banthine) 50 mg. every six hours, was started. After two or three days of this therapy the signs and symptoms subsided and the amylase value returned to normal.

Oral cholecystography, on January 20, failed to demonstrate a gallbladder shadow. The procedure was repeated the next day with the same results. On January 22, intravenous cholangiography was performed. The common duct was visualized and appeared normal in calibre, and no stones were demonstrated in the duct. Several small calculi were demonstrated in the fundus of the gallbladder. Blood studies to detect the presence of congenital hemolytic anemia were negative.

On February 2, 1960, an operation was performed through a right upper paramedian incision. There was moderately extensive fat necrosis scattered over the omentum, parietal and visceral peritoneum. The pancreas was enlarged two or three times its normal size. The gallbladder was subacutely inflamed and contained about 30 small cholesterol stones. Cholecystectomy was performed and the common duct explored. No stones were found in the duct and a No. 5 dilator passed readily through the ampulla. A T-tube was left in the duct.

This patient made an uneventful postoperative recovery and his T-tube was removed on the 8th postoperative day. He has had no further attacks eight months after operation.

DISCUSSION

Acute pancreatitis is usually considered to be a disease of middle age and to be frequently associated with obesity, cholelithiasis and alcoholism. It is rarely encountered in children.[3, 6] On reviewing the medical literature, Blumenstock, Mithoefer and Santulli[5] report only 35 cases of acute pancreatitis in children. The youngest patient they found was an 8-month-old infant, who incidentally recovered after operation.

In the majority of cases the etiology is unknown. In children, unlike adults, associated biliary tract

disease is extremely rare. A small number of cases followed trauma to the abdomen and in three or four cases roundworms were found obstructing the bile or pancreatic ducts. Gibson and Haller[4] report a case of acute pancreatitis associated with congenital bile duct cyst.

The clinical picture is similar to that in adults, and the treatment is conservative initially, when a correct clinical diagnosis is made. In the case reported, subsequent biliary tract surgery resulted in the relief of further attacks.

CASE 3.—S.B., a 13-year-old girl, was admitted to hospital on September 26, 1960, the chief complaint being upper abdominal pain and vomiting. For the previous eight months she had experienced recurring bouts of rather colicky upper abdominal pain of several hours' duration. These occurred as often as two or three times a week. The attacks were frequently in the evening and on occasion had even awakened her from sleep. There was no history of specific food intolerance, jaundice or clay-coloured stools. She had no urinary symptoms, and her menses had not yet begun.

On admission the patient was an obese, healthy appearing young girl with normal pulse and temperature. Her skin and sclerae were clear, with no evidence of jaundice. Heart and chest findings were normal.

Her abdomen was obese but not distended. There was marked tenderness and some guarding in the right upper quadrant. No masses could be felt and there was no rebound tenderness. Rectal examination was normal. Urine was normal. A white blood cell count was 11,250 per c.mm.

The next day intravenous pyelography was performed. Both kidneys functioned normally but there was gross blunting and dilatation of the middle calyces of the right kidney. Because of these findings, cystoscopy and retrograde pyelography were performed on September 30. The bladder was found to be normal, and again the dilatation of the middle calyces of the right kidney was noted. However, the consultant urologist did not feel that there was significant ureteropelvic obstruction or that her symptoms were of renal origin.

Oral cholecystograms were taken on October 3 and again on October 4. Both examinations failed to demonstrate a gallbladder shadow.

A provisional diagnosis of cholelithiasis was made, and on October 5 an operation was performed through a right upper paramedian incision. The gallbladder was found to be small but quite thick-walled, and a small stone 0.7 cm. in diameter was palpable in its neck. The common duct and pancreas were normal. A cholecystectomy and appendectomy were performed. The patient made an uneventful recovery.

DISCUSSION

Although gallbladder disease is found most commonly in older patients, it is not uncommon to find cholecystitis and cholelithiasis in younger patients, particularly young women in the postpartum period.

Approximately 500 cases of cholecystitis with or without cholelithiasis have been reported in children. Despite this, it is a diagnosis which is rarely considered when one is confronted with a child complaining of recurring upper abdominal pain. It is possible that many more cases are missed because of failure to carry out x-ray examination of the biliary tract in these young patients.

The management of gallbladder diseases in children is essentially the same as that in the adult. Cholecystectomy is the treatment of choice and cholecystostomy, previously recommended for children, has fallen into disrepute. One must also keep in mind the possibility that gallbladder stones in children may be secondary to congenital hemolytic anemia. Appropriate blood studies must always be made in these young patients. If this condition is found, splenectomy should also be carried out, preferably before any biliary tract surgery.

CONCLUSION

In the differential diagnosis of abdominal pain in children, one is accustomed to think primarily of such common lesions as acute appendicitis, mesenteric adenitis, intussusception, hydronephrosis and congenital anomalies such as Meckel's diverticulum. In these young patients one rarely considers the possibility of "adult disease". All too frequently a needless appendectomy may be performed, in which a normal appendix is removed and an uncommon but more important lesion is overlooked. Three instances of such uncommon lesions in children seen in the author's practice over a one-year period are reported. These were carcinoma of the colon, acute pancreatitis and cholelithiasis. All three patients were treated surgically with satisfactory results; the same principles were employed as in adult surgery.

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Suite 208,
Medical Arts Bldg.,
Hamilton, Ont.