was proceeding satisfactorily. He was readmitted a month later for closure of the colostomy. By now the rectal wound had healed. He was discharged after ten days with a normal bowel action; when seen for follow-up purposes six weeks later all was well.

COMMENT

The question now arose of how this injury had been inflicted. Many possible causes were considered, including the "compressed air" joke and some unnatural sex act, but none seemed to fit this particular case. When the patient was approached he first said he was standing too near a firework, and it had gone off while he was in a stooping position. When told this could not be so and he would have to tell the truth, he gave the following astounding explanation. For domestic reasons he had become unhappy and morose, and on the evening of November 4 he decided to explode a firework up his seat. He accordingly fashioned a narrow tube, using cartridge paper, and with the aid of a pencil introduced one end of this tube, approximately 6 inches (15 cm.) in length, into his rectum. He then placed a lighted firework into the end of the tube projecting out of his anus, with the result that a hole was blown through the anterior rectal wall. This escapade had taken place the evening previous to admission.

At first this story was accepted with reservations. What, for instance, happened to the firework—no charred bits were detected. Could a paper tube, even of stiff paper, be introduced into the anus against the action of the sphincter, and would there not have been some signs of singeing at least around the anal regions? However, there appeared to be no other reasonable explanation. He was referred to a psychiatrist, who stated there was no doubt this was indeed the true sequence of events.

The history in this case was grossly misleading, but had, of course, been made so deliberately. Had there been any suspicion of trauma to the rectum, examination under general anaesthesia would have been the first step.

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Ruptured Infected Urachal Cyst

This condition is rare enough to warrant the report of a single case.

CASE REPORT

A boy aged 16 was sent into hospital as an emergency case. The accompanying note from his general practitioner stated "appendicitis." The patient said he had always been perfectly well until ten days previously, when he noticed that about half-way through the act of micturition he developed lower abdominal pain of such severity that he was obliged to terminate the flow. This symptom persisted for four or five days, during which he was seen at another hospital; no abnormality, however, could be found. On the day before his admission the lower abdominal pain had become much more severe and was now constant. Micturition was still painful and there had been some diarrhoea. He had vomited several times.

On admission he was obviously ill, with earthen complexion and coated tongue. His temperature was 99° F. (37.2° C.) and pulse rate 92. The abdomen did not move on respiration and there was generalized muscle-guarding with rigidity across the hypogastrium. Tenderness appeared to be maximal in the right iliac fossa. Rectal examination revealed marked tenderness in the recto-vesical pouch. There were no bowel sounds on auscultation of the abdomen.

The history was a little strange and not typical of acute appendicitis. Clearly, however, he had peritonitis, and this appeared to originate from some condition in the pelvis. A pre-operative diagnosis of a perforated pelvic appendix was therefore made—on the grounds that "common things are commonest."

The abdomen was opened through a gridiron incision. There was much pus in the peritoneal cavity, but the appendix was normal. Further palpation revealed an extra-

peritoneal mass overlying the fundus of the bladder, with a finger-like prolongation extending upwards in the midline along the deep aspect of the anterior abdominal wall. The appendix was removed. A lower right paramedian incision was then made and the previous findings were confirmed. Omentum was adherent to the mass, and when this was separated an abscess cavity the size of a plum was opened from which pus and debris escaped. The situation of the mass and the midline upward prolongation from it made the diagnosis obvious: this was a ruptured infected urachal cyst. The pus was cleared away from the peritoneum and a drainage tube inserted through the gridiron incision to the abscess cavity. Both incisions were then closed. A cystoscope was passed and a little dimple, with a collar of mucosa around it, was seen in the roof of the bladder. There was no sign of any inflammatory process in the bladder.

Post-operative progress was satisfactory, both wounds being well healed by the tenth day. A specimen of pus from the abscess cavity contained mucoid material and numerous pus cells. No organisms were seen and no growth could be obtained on culture. A cystogram showed a normal bladder outline. Seven weeks after the operation the patient was in good health and symptom-free. No abnormality was detected on examination of his abdomen and rectum.

COMMENT

This subject was well reviewed by Brodie (1945), who included a survey of the literature up to that time. Apparently the earliest recorded case is attributed to Cabral in 1550. Urachal cysts are likely to be present in one of two ways: (1) the cyst may become large enough to cause pressure symptoms or to be discovered on routine examination of the abdomen; or (2) it may become infected and later rupture into the bladder, bowel, or peritoneal cavity, or a fistula may develop along the urachal track to the umbilicus. Other reported complications include tuberculous infection, calculus formation, and neoplastic change. Kantor (1939) believes that infection reaches the cyst by direct extension from the bladder along a narrow channel which later becomes obliterated by the inflammatory process. Others favour lymphatic or haematogenous routes. It is interesting to note that in a number of cases, including the present one, no organism has been cultured from the cyst contents.

All authors are not agreed on the method of treatment of the ruptured infected cyst. Some favour immediate excision and others preliminary drainage followed later by excision. A few suggest curettage and irrigation with silver nitrate. Callanan (1951) and Everett (1942) each report a case in which a ruptured infected urachal cyst was excised, together with adjacent bladder wall, at an emergency operation. In both cases histological examination showed the lining membrane of the cyst to be almost completely destroyed. Baldwin (1912), operating for incisional hernia four months after draining an infected urachal cyst, found no trace of the cyst. Kantor (1939) describes a case successfully treated by incision and drainage, and Gross (1953) reports five cases similarly treated. In four of Gross's patients no further treatment was necessary, but in the fifth a recurrence necessitated excision of the mass. It would seem reasonable, therefore, to treat these cases by simple drainage in the first instance. Excision would then be indicated only if there were further attacks of inflammation, if a fistula developed, or if a mass persisted in the abdomen. The likelihood is that the cyst cavity becomes obliterated after a bout of inflammation severe enough to cause its rupture.

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REFERENCES

- Baldwin, J. F. (1912). *Surg. Gynec. Obstet.*, 14, 636.
Brodie, N. (1945). *Amer. J. Surg.*, 69, 243.
Callanan, J. G. (1951). *Brit. J. Urol.*, 23, 271.
Everett, C. (1942). *Ann. Surg.*, 116, 154.
Gross, R. E. (1953). *The Surgery of Infancy and Childhood*. Saunders, Philadelphia and London.
Kantor, H. I. (1939). *Ann. Surg.*, 109, 277.