Abdominal Actinomycosis

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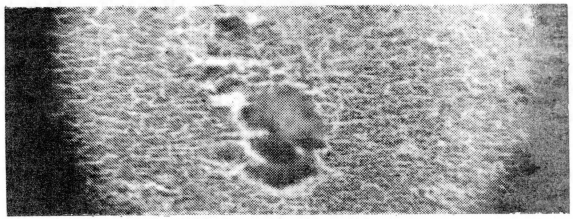
Actinomycosis is an uncommon chronic suppurative disease with a worldwide distribution. The causative organism, Actinomyces israeli, presently classified as a gram +ve bacteria (Muir, 1975) is an oral commensal in man. The gastro intestinal involvement is believed to be autogenus. It is difficult to ascertain the incidence of this disease in Zambia. However, during a two year period (1976–1977) four cases of abdominal actinomycosis were managed at Ndola Central Hospital. This paper is concerned with the report of these cases and a critical evaluation of the problem of this form of the disease.

CASE REPORTS

Case 1:

A 45 year old Zambian male was admitted to the urology ward with a suprapubic mass of four weeks duration. He denied any urinary symptoms but complained of lower abdominal pain and diarrhoea. On examination he looked anaemic and demonstrated features of recent weight loss. The suprapubic mass was fixed to the abdominal wall and thought to be arising from the urinary bladder. At cystoscopy, a submucosal projection from the fundus was noted. The overlying mucosa was normal. Biopsy of the lesion revealed only chronic inflammation. At laparotomy the terminal ileum and the omentum was firmly adherent to the bladder wall. Partial cystectomy and segmental resection of the ileum was performed. Histological diagnosis of actinomycosis of the small bowel was made (Fig. 1). The bladder wall only revealed chronic inflammat

FIG. I



reaction. The patient's overall recovery was complete with penicillin therapy.

Case 2:

A 32 year old Zambian female was admitted with a three month history of a painful left lumbar swelling. No associated urinary or bowel symptoms.

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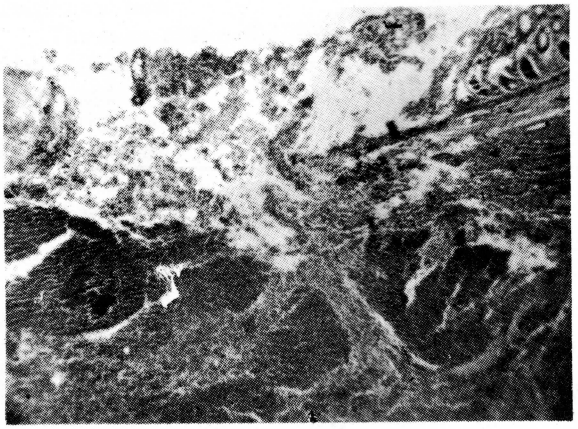
The patient looked anaemic. On examination the mass was hard and tender. Barium enema was not performed. Exploratory laparotomy showed the mass arising from the sigmoid colon and was adherent to the lateral abdominal wall. The meso-colon was grossly thickened and contained large nodes. The liver was normal. A left hemicolectomy with double barrel type of colostomy was performed on the presumptive diagnosis of carcinoma of the colon. Subsequently, a histological diagnosis of actinomycosis of the colon was established (Fig. 2). Penicillin therapy was commenced. Two months post operatively the colostomy was closed.

FIG. II



Case 3:

A 32 year old Zambian female was admitted to the gynaecology ward with a six month history of gradual lower abdominal distension. The patient was amenorrhoeic since a normal delivery six months before. She looked anaemic. A large mass was felt in the lower abdomen, which extended into the Pouch of Douglas. At exploratory laparotomy the mass consisted of adhesions between the ileum, urinary bladder and the uterine appendages and contained multiple small abscesses. The adhesions were separated with difficulty and a biopsy of the tubo-ovarian mass was taken. The bowel wall and the mesentery involved in the mass looked markedly thickened. On the third post operative day the patient developed a small bowel fistula. The histology showed actinomycosis of the ovary. With penicillin therapy and symptomatic measures the fistula healed.

Case 4:

A 20 year old Zambian male underwent a laparotomy for an epigastric mass of three weeks duration. The mass consisted of firm whitish tissue and was adherent to the transverse colon, liver and anterior abdominal wall. A substantial portion of the mass was excised. A few days post operatively the patient developed a faecal fistula. Subsequently, the residual tumour mass was excised and the faecal fistula arising from the transverse colon was closed. The patient progressed through an uneventful post operative period. Histology of the mass on both occasions was reported to be suggestive of "desmoid tumour". Five months later the patient was readmitted with a firm right subcostal mass. At exploration an abscess, involving the under-surface of the liver was drained. Histology of the necrotic contents of the abscess cavity showed typical colonies of actinomycetes in the liver tissue. The patient was subsequently placed on prolonged parentral penicillin therapy with a total recovery.

DISCUSSION

The incidence of abdominal actinomycosis (20%) is second only to the cervico-facial form of the disease (Cope, 1938). Among the intra-abdominal organs, the ileo-caecal region is the most common site (Davies & Keddie, 1973) and usually follows acute appendicitis (Wilson, 1961, Duncan, 1965). It appears that a breach of mucosal continuity of the gastro-intestinal tract increases the risk of an autogenus infection. The reported association of gastric actinomycosis in a case of large gastric ulcer (Nathan, 1929) and small bowel involvement following a foreign body perforation (Rigler, 1964) seems to support such a view. The relative rarity of gastric actinomycosis is due probably to the inability of the myces to survive in the strong acid environment of a healthy stomach. Genital tract actinomycosis in the famle is rather uncommon and is a result of direct spread from an adjacent infected viscus (Claye, 1963). We believe the tubo-ovarian involvement in our third case was secondary to an ileal disease. Hepatic involvement is also rare and results either from direct extension or via the portal vein (Boyd, 1967).

There is often a delay in the diagnosis of abdominal actinomycosis. The usual early presentation is a painless abdominal mass devoid of any pathognomonic physical feature. Whilst the results of haematological and biochemical examinations are essentially undiagnostic. Pre-operatively a diagnosis of a malignant tumour is usually entertained and the diagnosis may remain unresolved even during surgery. The final diagnosis, whilst essentially rests on histology, it is conceivable that an unsuspecting pathologist may in the absence of any clinical suggestion miss the mycelium in tissue sections. The fourth case probably exemplifies such a situation. Discharging abdominal sinus, when present, may make the diagnosis easier, but occurs as a late manifestation of the disease. Fistula formation between adjacent organs is also a late complication and we believe that left untreated our first case could have developed

an ileovesical fistula.

MANAGEMENT

Penicillin in the dosage of 2 mega units daily is considered to be the most effective therapy. This regime must be continued for one to two months after all clinical evidence of the disease has disappeared. Other antibiotics are indicated in case of allergy to penicillin or when the organism is penicillin resistant. The role of surgery is debatable. Duncan (1965) advocated a radical form of surgery, whilst a limited form of surgery with prolonged penicillin therapy was also noted to be satisfactory (Davies and Keddie, 1973). Our observation in the four cases seems to confirm the latter view. Since the infection in man is autogenus, adequate treatment of dental caries, a possible primary focus of the disease, is also an important aspect of the management.

SUMMARY

Four cases of abdominal actinomycosis managed during a two year period at Ndola Central Hospital are reported with a review of relevant literature. Difficulties associated in diagnosing this form of the disease are stressed. It is suggested that a limited form of surgery in combination with parentral penicillin therapy is usually effective in the management of abdominal actinomycosis.

REFERENCES

Boyd's Pathology for the Surgeon (1967).
W.B. Saunders and Company, P.320.

Clay, A. (Sir).
British Obstetric and Gynaecological Practice (1963),
William Heinemann Medical Books Ltd., p.561.

Cope, V.A. (1938), Actinomycosis,
London, Oxford University Press.

Davies, M. & Keddie, N.C. (1973).
British Journal of Surgery, 60, 18.

Duncan, J.A. (1965).
Am. J. Surg. 110, 148.

Muir, R. (1975). Textbook of Pathology.
Edward Arnold (Publishers) Ltd.,

Nathan, H. (1929). Virchows Arch.
Path. Anat. Physiol. 273, 281.

Porter, I.A. (1953).
British Medical Journal ii. 1084.

Rigler, A. (1964).
Magy. Sebezet. 17, 313.

Wilson, E (1961).
British Journal of Surgery, 49, 266.