Tuberculosis and Anal Fistula

By

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Anal fistulae are of common occurrence and represent a large percentage of the diseases of the rectum and anus. Khanna and Waryam (1955) reviewed 1,000 cases of the diseases of rectum and anus attending out-patients department and found that 14.7% were of anal fistula. However, when we consider the admission to the in-patients’ department we find a different picture viz. the total number of cases of the anorectal diseases admitted and treated over 5½ years in the Professor of Surgery’s ward, V.J. Hospital, Amritsar show that out of 532 patients of anorectal diseases 160 were of anal fistulae, thus constituting 30.07% of anorectal diseases.

For many years in the past, the common belief was held that majority of anal fistulae are tuberculous. This idea has undergone a revolutionary change in the last quarter of the century. Recent exhaustive work by various authors has shown that only a small percentage of fistulae are tuberculous in nature. Opinion have varied widely as to the percentage of anal fistulae that are tuberculous in nature and as to the part tuberculosis plays in anal fistula. Jackman and Buie (1946) have described two reasons for this difference of opinion. The first is that the criteria on which the diagnosis is made to differ. At one extreme are those who make demonstration of tubercle bacilli in fistula a requisite for positive diagnosis. At the other extreme are those who feel that the clinical picture or even the demonstration of tuberculosis elsewhere in the body, is enough to establish the diagnosis of a tuberculous fistula. The second reason for the variance of opinion is the difference in the source of material investigated. It is now agreed by all that the laboratory methods are the only exact means of determining the tuberculous nature of fistula. These methods consist of demonstration of tuberculous granulation tissue (fibroblasts, lymphocytes, capillaries, fibrin) with typical Langhans type of giant cell, characteristic tubercle formation with caseation and monocytic and lymphocytic infiltration on histopathological examination, a positive guineapig inoculation or a positive culture of tubercle bacilli.

Gabriel (1948) is of the opinion that only histopathological examination will reveal a lower incidence of tuberculous fistula. In a series of 30 cases which he examined by guineapig inoculation he found 6 cases of tuberculous character, thus giving an incidence of 20.0%. Further he determined the nature of 45 fistulae by histopathologic means alone and encountered only 4 tuberculous fistulae, thus giving an incidence of 9.0%. Jackman and Buie (1946) encountered 600 causes of tuberculous fistulae as determined by histopathology and guineapig inoculation and their incidence in the reported series was 7.8%. In 160 patients of anal fistula treated in the Professor of Surgery’s ward from January, 1950 to August, 1956, histopathological examination was done in 121 cases and 16 of these cases (12.8%) showed evidence of tuberculosis. In the last three cases in the series a culture examination for tubercle bacilli revealed two positive cultures. In one of the two a growth of tubercle bacilli was obtained from a direct culture of the pus obtained from the fistula.

In a very large majority of cases of tuberculous anal fistula, the anal infection is secondary to pulmonary tuberculosis. Clarke (1925) found tuberculous fistulae to be thirteen times more common in tuberculous subjects than in non-tuberculous types. The presence of viable and virulent tubercle bacilli in the lower sigmoid and rectum in 30% of patients with pulmonary tuberculosis has been shown by Martin and Sweaney (1940). In this series a roentgenogram of chest showed a lesion in 2 of the three patients who had tuberculous fistula out of the last 25 unselected cases in whom this investigation was carried out.

Pathogenesis: An active extrarectal tuberculous lesion or a history of previous infection can usually be elicited in these patients. Infection leading to fistula is generally supposed to originate in an anal crypt and burrows its way in the perianal tissues. This internal opening cannot always be found. The infection usually occurs from the bowel lumen, the patient swallowing the sputum laden with tubercle bacilli. This is the commonest route of infection in patients suffering from pulmonary tuberculosis. The tubercle bacillus has a predilection for lymphoid tissue and so the infection usually spreads from the rectum through lymph channels and forms an abscess in the perianal tissues, though sometimes it may travel from the rectum to the perianal tissues by blood vessels or by direct extension. The tubercle bacilli may also gain entrance into the blood stream from some extrarectal focus and may lodge in the fat of ischiorectal fossa to start there as an abscess. Rarely cracks and abrasions round the anus may get infected by direct external inoculation. This perianal abscess on rupture leaves a draining fistula. The external opening may be a pinhole or appear as an irregular ulcer of varying size. The fistulous tract is patulous due to the absence of induration. The granulations are pale and flabby. The discharge is frequently continuous and is thin and milky. These form the majority of the tuberculous fistulae and are labelled the superficial variety. All the 16 fistulae seen in the present report conformed to this variety. The deep tuberculous fistula forms a tract with little induration and often leads to a palpable submucous thickening high up. It may be the result of a spread of the infection from the neighbouring organs which are the seat of tuberculosis, e.g. prostate, seminal vesicles, spine or sacroiliac joints.

Age Incidence: Since these fistulae are commonly a complication of pulmonary tuberculosis, the age incidence corresponds to that of later. Martin (1933) and Gendrassy (1948) found the greatest number in the third and fourth decades of life. In our 16 collected cases, the age incidence was as follows:

<table>
<thead>
<tr>
<th>Age</th>
<th>No. of cases</th>
</tr>
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<tbody>
<tr>
<td>1—10</td>
<td>Nil</td>
</tr>
<tr>
<td>11—20</td>
<td>1</td>
</tr>
<tr>
<td>21—30</td>
<td>5</td>
</tr>
<tr>
<td>31—40</td>
<td>3</td>
</tr>
<tr>
<td>41—50</td>
<td>2</td>
</tr>
<tr>
<td>51 and over</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>16 Total</td>
</tr>
</tbody>
</table>
Value of some special investigations

In the last 25 cases of the anal fistula admitted to Professor of Surgery’s Ward, B.S.R examination, x-ray of the chest and roentgenographic study of the fistulous tract were carried out. The record of B.S.R. fell into three groups,”

<table>
<thead>
<tr>
<th>B.S.R readings</th>
<th>No. of cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 to 7 mm, (Normal)</td>
<td>15</td>
</tr>
<tr>
<td>8 to 15 mm, (slightly abnormal)</td>
<td>6</td>
</tr>
<tr>
<td>16 to 110 mm, (grossly abnormal)</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>25</td>
</tr>
</tbody>
</table>

The grossly abnormal group included 4 patients of which 3 patients were to haemorrh tuberculous fistula. Skiagrams of chest revealed a lesion of the lung in 2 of these patients. The inference can, however, be drawn that grossly abnormal readings of B.S.R. are only suggestive of tuberculous nature of fistula and by no means diagnostic. In these patients the high level of B.S.R. may be due to pulmonary tuberculosis and not due to the nature of the fistula. Thus high sedimentation rate may prove the presence of infection but not its location.

The visualisation of fistula tract after the injection of a water-soluble opaque dye was found to be channels that have been responsible for many operative failures in the past (Fig. 1). The injection was found to be of greater value in finding out unsuspected and overlooked side traces and

For many years it has been taught that a tuberculous fistula should not be operated upon because after operation it is more apt, than not, to recur and if it remains healed, the pulmonary disease, if latent is often activated and if active is often made worse (Martin, 1935). There is still a wide spread feeling against surgery. But proctologists have operated on tuberculous anal fistula for a number of years and have obtained

favourable results. All our cases were operated upon, fistulectomy being performed under low spinal anaesthesia.

Streptomycin therapy

The remits obtained in tuberculosis fistulae cases in which surgery was performed and streptomycin was later supplemented in the post-operative period were most gratifying. It definitely shortens post-operative period required for the healing of the wound, ensures against recurrence and also act as a protective against spread or flare up of the pulmonary tuberculosis during surgical treatment. It is seen that with streptomycin, the wound is healed within four to six weeks. This is in contrast to a reported series of 68 cases of tubercular perianal infection treated by surgical excision alone, with resultant healing in 49 cases, but healing did not occur until after sixteen weeks or so in 14 instance (Granet, 1940). Koontz (1948) reported 19 cases in which streptomycin and surgery were combined and all of them healed promptly. He believes that the use of streptomycin supplemental to surgery is highly beneficial in the treatment of anorectal tuberculosis in that it increases the percentage of permanent cures, shorten the period of stay in the hospital by practically eliminating the discharge after a week, or tea days.

Two illustrative cases in the present series are reported below:

Case No. 1.

S.S., male, aged 35 years, a salesman was admitted on 3-2-1956, with the complaint of intermittent discharge flowing out of an opening over a small protruberance in the left perianal region, for the last tea years. It started as an abscess which burst spontaneously leading to a constant flow of thin, and watery discharges. In the history of past illness the patient had suffered from pulmonary tuberculosis of the left lung for which thoracoplasty was done in the year 1945. His wife had died of tuberculosis. On examination two small external opening were found on the left perianal region at 4 and 5 o’clock about 1” away from the anal verge. The fistulous tract was palpated as patulous. The digital examination revealed an internal opening at the level of intramuscular septum in the midline posteriorly. His B.S.R. was 18 mm 1st hour Westergren and x-ray showed lesion (?) active) in the right supraclavicular apex (Fig. 2).
Fistulectomy was performed on 7-2-1956. The histopathology of the excised tissue revealed a typical picture of tuberculosis (Fig. 3). The culture made from the pus discharge revealed a positive growth after 4 weeks. The post-operative period was eventless. Streptomycin was supplemented on the 4th post-operative day and the wound healed completely in 5 weeks.

K.S., male, aged 40 years, a labourer, was admitted on 7-2-1956 with the complaints of a discharging nodule right perianal region along with pruritis ani for the last 5 months. It started as an abscess which was accompanied by pain and slight rise of temperature. He got u incised from a barber and since then the world had not healed properly and a thin, watery discharge was constantly flowing from the opening. No history of tuberculosis was present in the family. On local examination a small nodule of the size of a pea, situated over a scar on the right perianal region at 8 o’clock about 1½ away from the anal margin, was noticed. A small external opening was seen over this nodule. The fistulous tract was palpated as firm cord leading towards the anal canal. On digital examination the internal opening was felt as a depression at the level of the intermuscular septum in the midline posteriorly. His B.S.R. was 95 mm 1st hour westergren and skiagram of the chest showed a well marked lesion with infiltration. (fig. 4). Fistulectomy was performed and the fistula was...

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Found to be of low level anal type. On histopathological examination of the tissue, the picture suggestive of tuberculosis was seen (Fig.5), but the growth of A.F.B. obtained five weeks after culture clinched the diagnosis. The post-operative period was eventless except that the wound showed little progress towards healing for the first ten days at which time streptomycin was substituted. There was a rapid improvement and the wound completely healed in six weeks.

**COMMENTS**

1. Not all the fistulae are tuberculous. Incidence of tuberculous fistulae was found to be only 12.8% in our series.

2. Tuberculosis fistulae are usually secondary on tuberculosis of the lung and the infection in them has reached the rectum from swallowing of the sputum laden with tubercule bacilli.

3. The diagnosis of tuberculous fistulae should depend on the laboratory examinations, because the gross and clinical findings may be indefinite as in Case report no.2.

4. Abnormal readings of B.S.R. are only suggestive of presence of tuberculosis infection.

5. X-ray of the chest often yields valuable information which may be quite significant in determining the nature of fistula.

6. Surgery is not contraindicated in anorectal tuberculosis. In fact surgery should be performed in all cases unless the patients pulmonary disease or some other condition contra-indicates the procedure.

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7. The tuberculous wounds take longer time to heal than the pyogenic variety. But streptomycin therapy, supplemental to surgery, definitely shortens the ost-operative period required for their healing.

REFERENCES


