

## RADIOLOGICAL ASPECTS OF TUBERCULOUS ADENITIS OF THE ABDOMEN.\*

By DAVID P. LEVACK, M.B., D.M.R.E.  
Honorary Radiologist to Aberdeen Royal Infirmary.

THE radiologist's part in the diagnosis of tuberculous adenitis of the abdomen is necessarily somewhat limited. In order that the fullest possible use may be made of radiological diagnostic methods in connection with this disease, it is most desirable that close co-operation should exist between the physician or surgeon in charge of the case and the radiologist. I wish to emphasise this particularly because the radiologist is frequently called upon to confirm or refute a diagnosis of tuberculous adenitis in a case in which the clinical picture is not at all clear. Indeed, it seems to me that it is only in a difficult case that the radiologist is of importance; such a case in which the vagueness of the history combined with a lack of definite clinical signs requires a full investigation of more than one system of the body.

**Can Tuberculous Lymph Glands be demonstrated radiographically?**—It is quite obvious that the acutely inflamed, recently infected, tuberculous node cannot be demonstrated radiologically by any direct shadow, either upon the X-ray film or the fluorescent screen. If pathological tuberculous nodes are present in the abdomen they are either calcified or not calcified. If they are calcified, they can certainly be demonstrated by modern radiographic technique properly carried out. It is quite true that such calcified tuberculous nodes are not readily seen by screen examination of the abdomen unless the calcification is of considerable extent and density. It is therefore essential that radiographs be made of the abdomen in suspected cases, and the radiograph will frequently show a very typical shadow of calcified nodes which have not been seen on the screen.

**Interpretation of Shadows.**—The appearance of a shadow or shadows suggesting calcified nodes in the abdomen is not always the end of the matter from the X-ray point of view. It is said, although I cannot vouch for it, that there are twenty-seven conditions which may produce shadows in abdominal

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radiographs, which may be confused one with the other. This presents an appalling picture to the radiologist's mind. Fortunately, it is grossly exaggerated, and the *differential diagnosis* usually lies between one or two more common conditions. It is very frequently necessary to differentiate between a calcified node and a urinary calculus. This entails radiographic examination of the urinary tracts by one or other of the methods available, either by ureteral catheterisation and retrograde pyelography, or by excretion urography. In my experience this is the commonest differential diagnosis required where there is doubt as to the exact nature of the shadow visualised. It may also be necessary to differentiate shadows produced by gall-stones, faecal concretions, and deposits of calcium in organs like kidney, suprarenal gland, uterus, and ovary. In each case some special technique will be decided upon by the radiologist.

**Accessory Methods of Diagnosis.**—If nodes are not calcified, shadows will not appear either on the screen or on a radiograph. The difficulty in the diagnosis is increased, and the radiologist is most frequently called upon to differentiate chronic or sub-acute appendicitis. This involves the technique of the opaque meal and the most careful screen examination of the appendicular region, on perhaps several occasions, with the closest attention to the site of any pain under the palpating hand. It is possible to demonstrate that the point of tenderness may be not exactly over the appendix, which indeed may appear mobile and normal, but in the region of the nodes in the ileocæcal angle. From such an examination the radiologist can but indicate that there is a pathological lesion present, but only with concomitant clinical symptoms can a diagnosis of tuberculous adenitis be made.

It may be necessary to investigate fully the appearance of the colon where bowel symptoms are predominant, and the only satisfactory method of carrying this out is by an opaque enema. There is, however, no characteristic radiological appearance of the colon associated with tuberculous adenitis, and the examination, like so many radiological examinations, is essentially a negative one, or one which excludes conditions of the bowel giving rise to symptoms like tuberculous adenitis, from associated pain, nausea, and general abdominal features.

Quite apart from the examination of the abdomen, it may be absolutely necessary to examine radiologically other parts

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of the body for evidence of tuberculous infection. In this search for other foci the radiologist is concerned only with the chest, and a systematic examination of the lungs is often of great value. Practically the only other type of tuberculous focus which may require a radiological diagnosis is that found in bones and joints. The occurrence of tuberculous nodes in cervical, axillary and groin regions does not demand the attention of the radiologist.

### *Calcified Abdominal Nodes.*

725 Cases examined radiologically for various abdominal symptoms,  
by various techniques. 1929-1935.

Technique.	Total Number.	Showing Calcified Nodes not Necessarily Suspected.	Nodes Suspected but not Demonstrated.	Nodes Suspected and Demonstrated.
Urinary tract . . .	154	28	3	4
Straight radiograph of abdomen . . .	53	7	12	6
Gall-bladder . . .	80	8	1	1
Opaque meal . . .	278	7	3	3
Opaque enema . . .	160	5	4	2

**Personal Findings.**—I have collected 725 cases in my private practice from the year 1929 to 1935 inclusive, in which the abdomen was examined by various techniques for various abdominal symptoms, not necessarily for tuberculous adenitis, and I have tabulated in those cases the occurrence of calcified abdominal nodes under various techniques. They are as follows :—

1. In a total of 53 cases in which the abdomen was examined by a simple radiograph, 7 showed calcified nodes which were not necessarily suspected, 12 failed to show nodes which were suspected, and 6 showed nodes which were suspected.

2. In a total of 154 cases in which the urinary tract was examined, 28 showed calcified nodes which were not necessarily suspected, 3 failed to show nodes which were suspected, and 4 showed nodes which were suspected.

3. In a total of 80 cases in which the gall-bladder was examined, 8 showed calcified nodes which were not necessarily suspected, 1 only failed to show a suspected node, and 1 only showed a suspected node.

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4. In a total of 278 cases of opaque meal investigations, 7 showed unsuspected nodes, 3 showed no evidence of suspected nodes, and 3 showed nodes which were suspected.

5. In a total of 160 cases examined by opaque enema, 5 showed nodes not necessarily suspected, 4 failed to show suspected nodes, and in 2 cases where nodes were suspected they were demonstrated.

It will be seen that the largest number of calcified nodes demonstrated appears in the series in which there was some urinary tract disturbance. It also appears that the incidence of calcification in abdominal nodes does not appear to be excessively large. Moreover, one could argue that calcification does not necessarily mean an original tuberculous infection.

I trust that my remarks have not been too long, and that I have made the radiologist's position clear in connection with the diagnosis of tuberculous adenitis.