

ILIAC GLAND BIOPSY IN TUBERCULOUS-SUSPECT HIP DISEASE

By

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A decisive answer to the problem: tuberculosis or not in chronic infectious hip disease often involves considerable diagnostic difficulties, particularly in the early stages with only few or non-specific roentgen changes.

Earlier when therapy of the chronic coxites was quite uniform, it was from the point of treatment less important that only a course of quite long duration revealed the specific or non-specific nature of the disease. Now on the other hand early and exact diagnosis is necessary in order to obtain with specific chemotherapy a quicker and more reliable recovery with the possibility of completely or partially preserved joint function or with solid ankylosis, whether spontaneous or the result of a successful arthrodesis. Finally the unnecessary danger should be mentioned of using for months the not completely atoxic tuberculosis-chemotherapeutics, if the diagnosis is not exact.

Not only in older, but also in more recent publications (12, 20) on hip tuberculosis the difficulty of clinical diagnosis within the first 1–2 years is pointed out, although cases of even longer duration of coxitis with destructive changes either are not recognised as tuberculosis or are erroneously diagnosed as tuberculosis. Thus *Milgram* finds 41 % of later confirmed tuberculosis clinically diagnosed as non-specific coxitis, and vice versa *Smith* (19) and *Sundt* state the incidence of erroneously diagnosed hip tuberculosis respectively as 22 % and 30 %; on the whole bone and joint diseases are erroneously diagnosed as tuberculosis just as frequently as not (18)—according to *Ghormley* respectively 34 % and 38 %.

Specific chemotherapy has, as stated, increased the demand for an

exact and early diagnosis, which has contributed to a more frequent use of diagnostic interventions in tuberculosis-suspect bone and joint diseases, like puncture, drilling biopsy, explorative arthrotomy and regional gland biopsy. Of these only joint puncture and regional gland biopsy are suitable for hip diseases; aspiration puncture which is only of use if the coxitis is not "dry", or the cannula is not at once blocked by fibrin, has furthermore the disadvantage that the tubercle bacillus investigation lasts 8 weeks, while the histological result of gland biopsy is to hand in the course of a few days.

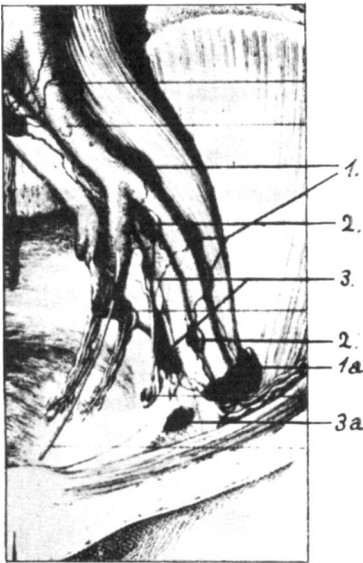
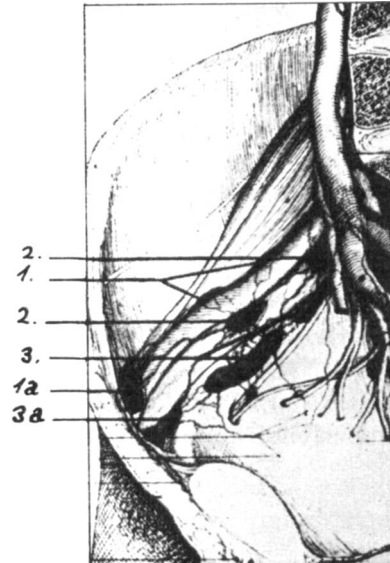
The purpose of the following therefore is to draw attention to the diagnostic value of iliac gland biopsy in chronic infectious hip disease, since the small scope of the operation, in contrast to arthrotomy, permits its use as a routine examination.

The clinical-diagnostic importance of palpable regional adenitis is discussed in the majority of publications on bone and joint tuberculosis over the last 40–50 years and is pointed out especially in French literature, e.g., by *Lance*, who besides the presence of axil- and bicipital adenitis in osteo-articular upper extremity tuberculosis and adenitis in the inguen and poples in tuberculosis of the knee and foot joint, also discusses in detail iliac adenitis in specific coxitis; in addition *Simeray* (1911) and *Lenoel* (1912) describe it as an early and reliable symptom, and later *Delcroix* (1952) who—without, however, discussing biopsy—states further that it may be difficult to decide by palpation if swollen iliac glands are present.

Despite what was obvious in regional gland biopsy positive information on the subject only emerged 20–25 years ago (*Ottolenghi, Valls*, 1933, *Seddon*, 1939). In these and later publications gland biopsy is fundamentally discussed in diseases of the peripheral joints (1, 15), especially the knee joint (22), and apart from *Arden & Scott's* 24 cases (1947) only a few cases of iliac-gland biopsy in coxitis (15, 16); some have undertaken biopsy of inguinal glands, but as expected with predominantly erroneous and negative results, since the hip joint is drained to these only secondarily.

Regional lymph glands of the hip joint.

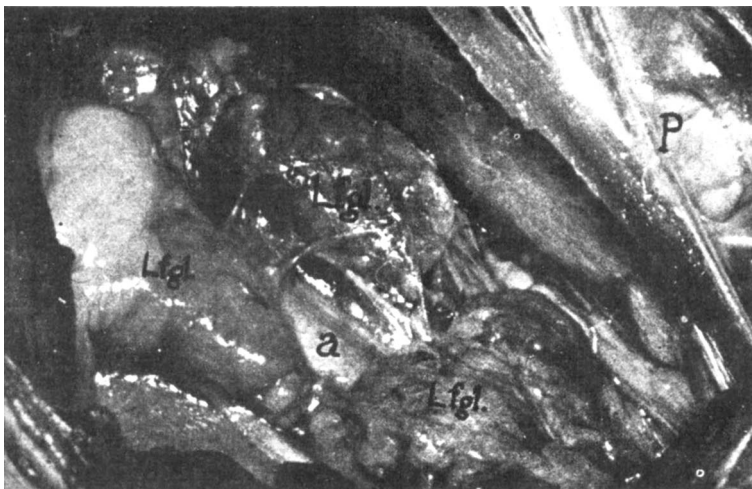
The hip joint is drained primarily by the external iliac glands (3, 8, 11) which numbering 8–10 lie along the external iliac vessels and according to their relation to these are divided into a lateral, medial and intermedial group.

*Fig. 1 a.**Fig. 1 b.*

(According to Marcille).

1: lateral; 2: intermedial; 3: medial.

1 a and 3 a: external and internal retrocrural ganglion.

*Fig. 2.*

(a = external iliac artery; p = peritoneum).

Topography and terminology.

Lateral group (3–4 lym. glands.) lying between the psoas and external iliac a., yet the most distal and largest, the “retrocrural external ganglion”, often lying pre-arterially.

Medial group (3 lym. glands.) below and medial to the external iliac vein, the most distal, the “retrocrural internal ganglion”, lying where the arcuate line ends.

Intermedial group (2–3 lym. glands.) approximately pre-venously.

The lymph glands along the iliac ext. vessels are also called iliac inf. lym. glands. (ext. and int.) and the most distal, situated at the annulus femoralis, are called the suprafemoral lat. and med. lym. glands. (8), from which there distally is communication to both the deep and superficial inguinal glands.

PERSONAL INVESTIGATIONS

At the Finsen Institute, dept. K.—during the period 1950–1957—iliac gland biopsy was employed in 20 cases of chronic infectious hip disease with few and uncharacteristic radiological changes, so as to determine in this way if possible the problem of tuberculous or non-specific coxitis.

A detailed record of the cases is given in Fig. 3—In all cases the disease was monoarticular, and the symptoms: pain, limping, limitation of mobility, and in the majority of cases additional muscle atrophy had lasted from $\frac{1}{4}$ – $\frac{3}{4}$ of a year; only 4 patients had had symptoms for 2–5 years. All the patients were children or young people, and only one patient was over 30 years.

Radiologically halisteresis was found in most cases, in some too there was increase in width or contraction of the joint space and only in isolated cases slight destructive changes.

TECHNIQUE

The technique employed in the gland biopsy is as follows: an oblique incision 10–12 cm. long is made in the fossa iliaca down towards the inguinal ligament, the abdominal musculature is divided in layers, the peritoneum is retracted, after which the ext. iliac vessels are localised and one or more of the lymph nodes lying in loose fat-connective tissue are removed, both for histological investigation and for tubercle bacilli culture.

The size and site of the lymph glands are to be seen in Fig. 2 (case no. 18) where tuberculosis was demonstrated histologically and bacteriologically in all 3 glands.

RESULTS

In 6 of the 20 cases (Fig. 3) tuberculosis was demonstrated, in one of these (no. 17), however, only histologically. In one case (no. 7) no glands could be found, probably as a consequence of incorrect technique, but tubercle bacilli were demonstrated in the joint punctate.

In the remaining 13 cases the histological diagnosis was simple adenitis or sinus reticulosis and the tubercle bacilli investigation was negative.

DISCUSSION AND CONCLUSIONS

The diagnostic accuracy of both tuberculosis positive and negative regional gland biopsy is best judged by comparison with simultaneous joint puncture, if exudate is present, or explorative arthrotomy; with respect to inguinal-gland biopsy in osteo-articular diseases of knee and foot the problem has been examined by *Seddon, Saigal et alii*, and *Stewart*, and according to these positive gland biopsy, found in 60–80 % of confirmed bone and joint tuberculosis, was always reliable, where by contrast negative biopsy did not completely exclude tuberculosis; in particular *Saigal et alii* found explorative arthrotomy more accurate with fewer false negative results. Finally it should be stated that iliac and inguinal gland tuberculosis rarely occurs without demonstrative focus (7), and that this may be localised to the abdomen or genitalia.

Regarding the diagnostic accuracy of the present 20 cases of iliac gland biopsy it may be said that in the 8 cases with simultaneous puncture there was full agreement between biopsy and bacteriological investigation of joint punctate, and it ought to be noted that in 7 of these cases the biopsy was tuberculosis-negative.

Another, certainly less accurate evaluation which could be used in determining the reliability of gland biopsy is based on the later course of the hip disease; after discharge from hospital the course is followed-up by means of regular checks. All the cases with positive biopsy had a course similar to tuberculosis, modified by specific chemotherapy; evidently negative biopsy was just as reliable, as none of these cases later manifested specific coxitis clinically or radiologically, but on the contrary had quite a short and mild course.

In this material joint puncture gave the same result as gland biopsy;

but it is uncertain if this would also be so in a larger material and the examination of joint punctate, if this can be obtained, is in any case an unsuitable procedure when a quick diagnosis is required as the basis for possible chemotherapy. For this purpose gland biopsy must be preferred, since the intervention is lesser than arthrotomy of the hip, and the results seem reliable.

In spite of a material of only 20 cases one may be justified in concluding that in confirming or disproving quickly and early the diagnosis of tuberculous coxitis the iliac gland biopsy is valuable and very suitable as a routine examination of chronic infectious hip diseases with few and uncharacteristic radiological changes.

S U M M A R Y

In specific chemotherapy of osteo-articular tuberculosis early and exact diagnosis is imperative if the optimal effect as to more or less preserved articular mobility is to be expected.

Since infectious disease of the hip joint frequently, and especially during the early course, is erroneously diagnosed as tuberculosis in non-specific cases and vice versa, the diagnostic value of regional lymph node biopsy has been investigated, emphasising that the hip joint is drained primarily by the external iliac glands.

Iliac gland biopsy was made in 20 cases with slight and uncharacteristic radiological findings.

Tuberculosis was found in 6 cases and non-specific adenitis in 13; in 1 case, with tubercle bacilli in joint fluid no iliac glands were to be found, most likely because of wrong operative technique.

The later course of the positive cases was typical of tuberculosis, modified, however, by specific chemotherapy, while the 13 non-specific cases had a shorter and milder course without manifestation of tuberculosis in any case during the observation time.

In the efforts to prove or rule out the diagnosis of tuberculosis quickly and early in infectious hip disease iliac gland biopsy is valuable and very suitable as diagnostic routine examination.

R E S U M E

Dans la chimiothérapie spécifique de la tuberculose ostéo-articulaire, il est absolument indispensable qu'un diagnostic exact soit établi très tôt si l'on veut obtenir l'effet optimum quant à la mobilité articulaire plus ou moins conservée.

Etant donné que les maladies infectieuses de l'articulation de la hanche, surtout dans le stade initial, sont souvent diagnostiquées faussement comme tuberculose dans des cas non spécifiques et vice versa, la valeur de la biopsie des ganglions lymphatiques régionaux a été étudiée, en soulignant que l'articulation de la hanche doit être drainée primairement par la glande iliaque externe. La biopsie de la glande iliaque a été pratiquée dans 20 cas avec trouvailles radiologiques faibles et non caractéristiques.

La tuberculose a été décelée dans 6 cas et l'adénite non spécifique dans 13, dans un cas, avec bacilles tuberculeux dans le liquide articulaire, alors qu'il n'en a pas été trouvé dans la glande iliaque, vraisemblablement par suite d'une technique opératoire erronée. Le cours tardif des cas positifs était typique de la tuberculose, modifié toutefois par chimiothérapie spécifique, alors que dans les 13 cas non spécifiques, le cours de la maladie a été plus court et plus bénin, sans manifestation de tuberculose dans aucun des cas, pendant toute la durée de l'observation.

Dans les efforts faits pour établir rapidement le diagnostic de la tuberculose dans les maladies infectieuses de la hanche, la biopsie de la glande iliaque est de grande valeur et il convient de la pratiquer dans le cadre de l'examen courant pour poser le diagnostic.

ZUSAMMENFASSUNG

Hinsichtlich der spezifischen Behandlung der Gelenktuberkulose ist eine frühzeitige und genaue Diagnose äusserst wichtig, wenn man mit einer optimalen Wirkung auf die mehr oder weniger erhaltene Gelenkbeweglichkeit rechnen will.

Da infektiöse Erkränkungen des Hüftgelenkes häufig und besonders im Beginne der Krankheit, irrtümlicherweise in unspezifischen Fällen als Tuberkulose angesehen wird und vice versa, wurde der diagnostische Wert der regionalen Lymphdrüsenbiopsie untersucht. Man hebt dabei hervor, dass der Lymphabfluss vom Hüftgelenk vor allem zu den äusseren iliakalen Lymphknoten geht.

Probeexcision wurde in 20 Fällen mit leichten und uncharakteristischen Röntgenbefunden vorgenommen.

Tuberkulose wurde in 6 Fällen und unspezifische Adenitis in 13 gefunden. In einem Falle mit Tuberkelbazillen in der Gelenksflüssigkeit wurde, wahrscheinlich wegen unrichtiger operativer Technik, keine iliakale Drüse gefunden. Der spätere Verlauf der positiven Fälle

war typisch für eine durch spezifische Behandlung modifizierte Tuberkulose, während die 13 nicht spezifischen Fälle einen kürzeren und milderen Verlauf ohne Zeichen von Tuberkulose in jedem Falle während der Beobachtungszeit aufwiesen.

In dem Bestreben die Diagnose der Tuberkulose in Fällen von infektiösen Hüfterkrankungen rasch und frühzeitig zu sichern oder auszuschliessen ist die Probeexcision der iliakalen Lymphdrüse wertvoll und als eine diagnostische Routineuntersuchung sehr geeignet.

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