SUBFASCIAL FAT HERNIATION AS A CAUSE OF LOW BACK PAIN

DIFFERENTIAL DIAGNOSIS AND INCIDENCE IN 302 CASES OF BACKACHE

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Subfascial fat herniation is a clinical entity in which fat herniates from a deep stratum to a more superficial one. It usually occurs in the lumbo-sacral or sacro-iliac region as a result of trauma, and is due to a weakened area of the deep layer of the superficial fascia. The chief characteristic is a single or multiple painful nodules which the patient is frequently able to localize. The pain is severe and the patient is actually unable to move when first seized by it. The symptoms and signs can be analogous to those that appear in a strangulated inguinal hernia. "Fibrositis" is the term frequently applied to this condition since the nodules were originally thought to be caused by excessive fibrous tissue. This is a report of 302 consecutive cases of previously undiagnosed low back pain.

Copeman and Ackerman (1944) first showed that these nodules were herniations of fat through the superficial fascia, and in other cases I have studied (Herz, 1946) their work was amply confirmed. When these nodules are located, either by the patient or by the examiner, an injection of 5 ml. 1 per cent. procaine underneath the nodules will produce startling and dramatic results, the patient being relieved of the pain within a few minutes; usually this relief is only temporary, but the injection serves as a diagnostic aid, and may be used repeatedly as a treatment.

FIG. 1.—Distribution of fascial fat (Copeman and Ackerman, 1944).

Surgery is resorted to in those cases where the relief obtained from injection is too short or where repeated injections are impracticable.

Surgical removal of palpable nodules should never be attempted until after a thorough therapeutic test with injections of aqueous solutions of anaesthetic agents. If such injections do not relieve the pain there is little likelihood that an operation for subfascial fat hernia will give relief.

In the differential diagnosis a detailed history is very important, since a history of injury—such as a fall—is present in nearly all these cases. Often the onset of severe pain, as differentiated from an ache, is attributed

to a specific injury. It is important to find out the exact type of injury and its relationship to the pain of which the patient complains.

A careful physical examination with thorough palpation to elicit trigger points of pain and painful nodules is essential. Copeman and Ackerman (1944) found that the distribution of fat in the lumbar and lumbo-sacral area in an anatomical study of fourteen cadavers (Fig. 1) coincided almost exactly with the distribution of trigger points of pain in fifty consecutive cases (Fig. 2).

FIG. 2.—Distribution of trigger points of pain in fifty consecutive cases (Copeman and Ackerman, 1944).

Routine roentgenograms of the spine in antero-posterior, lateral, and oblique positions should be made to exclude disease or injury to the bone. The sacro-iliac joints should be clearly delineated, since involvement of these joints was often thought to be the cause of low back pain when actually the herniated fat was the causative agent.

It must also be remembered that more than one cause of low back pain may exist simultaneously. Painful nodules are frequently present when there is also evidence of arthritis of the spine. Treatment for arthritis alone will not relieve the patient, but the symptoms can be greatly relieved if injections of anaesthetic solutions are also given.

The possibility of an internal abdominal disease, such as retrocaecal appendicitis, nephrolithiasis, or gall-bladder disease, must naturally also be considered in the differential diagnosis of low back pain. Some of the many other causes of low back pain found were post-traumatic cysts pressing on the sciatic nerve (Herz, 1948), disrupted intervertebral disks, incomplete fracture of the lumbar spine, and spondylolisthesis (see Table, overleaf).

ANNALS OF THE RHEUMATIC DISEASES

TABLE

CLINICAL DIAGNOSIS IN 302 CASES OF LOW BACK PAIN

Diagnosis	No. of Cases
Subfascial fat hernia relieved by operation	89
Painful nodules relieved by anaesthetic injections	92
Painful nodules with chronic arthritis of spine	39
Incomplete cases (relief followed one injection of anaesthetic solution to painful points, but no follow-up)	50
Undiagnosed (injection gave no relief and no other cause for backache was revealed)	8
Disrupted intervertebral disk (two also had subfascial fat hernias)	6
Post-traumatic cyst pressing on sciatic nerve	3
Tuberculosis of spine	1
Fractured coccyx	2
Incomplete fracture of lumbar spine	1
Spondylolisthesis (roentgenographic diagnosis)	3
Sacro-iliac dislocation (roentgenographic diagnosis)	3
Retrocaecal appendicitis	3
Renal calculus	2
Total	302

Technique of Operation for Fat Hernia Removal

The area of the herniated fat is marked with a dye before operation to compensate. It is blocked off with 30 to 50 ml. 1 per cent. novocaine. The skin is incised and the herniated fat is excised by sharp dissection (Fig. 3). The size of excised fat

FIG. 3.—Incisions for subfascial fat herniotomy.

specimens is shown in Fig. 4, and a microscopic section of excised fat shows mild inflammatory process (probably traumatic) in Fig. 5. If the hernial opening cannot be located, the dissection is continued until the deep fascia is encountered. Haemostasis is then attended to and the wound sutured, preferably with stainless steel wire. A rubber dam drain is inserted and left *in situ* for one week to prevent

FIG. 4.—Excised fat specimens.

FIG. 5.—Microscopic section of excised fat, showing mild inflammatory process.

an accumulation of fluid in the wound and to facilitate healing. Dressings should be changed daily or more frequently depending on the amount of drainage. Sutures are removed in from 8 to 12 days. Wounds in the back do not heal as rapidly as those on the anterior part of the body.

Case Reports

Case 1, female, aged 34, had had recurrent attacks of lumbago for 17 years. Roentgenograms of the lumbar spine showed advanced osteo-arthritis. In addition, she had bilateral subfascial fat hernias which were treated surgically. The arthritis has not progressed materially since the operation 5 years ago, and the patient has had no further attacks of lumbago.

Case 2, female, aged 43, had a fall 2 years before she consulted me. Routine roentgenographic examination disclosed a fracture of the coccyx and injury to the sacrum. She had a subfascial fat hernia in addition. This was excised at the time of operation on the coccyx, and the patient obtained satisfactory relief.

Case 3, female, aged 46, suffered from severe backaches for 10 years after a fall, and had been treated for "arthritis" without obtaining relief. About a year before I saw her she had had a second severe fall which greatly aggravated her pain.

For several months she had extreme discomfort when sitting, and there was referred pain down the left leg. Since all therapeutic measures had failed, her physician concluded the pain was psychogenic. I found a trigger point of pain in the left sacro-iliac region and a large palpable mass in the left buttock. This was considered to be a case suitable for operation because complete relief was obtained by injections of 1½ per cent. aqueous metycaine solution. At operation, herniated fat was excised over the left sacro-iliac region, and a large mass of dense fibrous tissue was widely excised through an incision over the left buttock. Examination of the specimen showed an organized haematoma with multiple haemorrhagic cysts, which were pressing on the sciatic nerve. The patient had complete relief from her disability, and was able within a few months to make a 5,000-mile motor trip without any recurrence of symptoms.

Case 4, male, aged 37, had the first episode of pain in October, 1948, without known trauma. Pain extended from the right heel to the thigh. Symptoms persisted unabated despite various treatments until July, 1950. A subcutaneous fatty mass was located near the right sacro-iliac joint. A diagnostic test of injections with anaesthetic solutions gave

prompt relief of short duration, and operation was advised. The mass was excised and relief from pain was complete.

Case 5, female, aged 23, was involved in a motor accident in January, 1948, and suffered trauma to the back. She had had various treatments elsewhere, including 6 weeks in a plaster of Paris jacket, without relief. In July, 1949, several painful fatty nodules were injected, and the patient obtained the first relief from pain since the injury. Injections were repeated and operation was advised. This was performed in July, 1950. Relief was immediate and the patient recovered completely.

Summary

(1) The differential diagnosis and incidence of subfascial fat herniation as a cause of low back pain in 302 consecutive cases is discussed.

(2) Many of these cases had painful nodules in the back, and the pain was relieved by injections of anaesthetic solutions. In 92 cases, the symptoms were controlled by repeated injections at intervals, and operation was deemed unnecessary. Operation for removal of herniated fat was performed in 89 cases.

(3) In 39 cases which had these painful nodules in addition to chronic arthritis, varying degrees of relief from pain were obtained by anaesthetic injections.

(4) A complete history, thorough physical examination, and routine x rays are essential for the differential diagnosis. Some other causes of low back pain previously undiagnosed were post-traumatic cysts pressing on the sciatic nerve, disrupted intervertebral disk, arthritis, and retrocaecal appendicitis.

(5) The proportion of cases of subfascial fat hernias in this series is probably higher than normal because so many patients were referred to the author on account of his known interest in this condition. The large number in this series suggests, however, that many cases of undifferentiated low back pain rightly belong in this group, since a study of the literature indicates that relief has been obtained by the procedure described in many undiagnosed cases of low back pain.

Figs 1 and 2 are reproduced from Copeman and Ackerman (1944), by courtesy of the editors of the *Quarterly Journal of Medicine*, Clarendon Press, Oxford, and Messrs. E. and S. Livingstone, Edinburgh, publishers of "Text Book of the Rheumatic Diseases", ed. W. S. C. Copeman.

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Hernie de la graisse sousaponévrotique comme cause de la douleur lombo-sacrée

RÉSUMÉ

(1) On discute le diagnostic différentiel et l'incidence de la hernie de la graisse sousaponévrotique comme cause de douleur lombo-sacrée dans 302 cas consécutifs.

(2) Beaucoup de ces cas présentaient des nodules douloureux et la douleur fut apaisée par des injections des solutions anesthésiques. Dans 92 cas les symptômes furent enrayés par des injections répétées et une opération ne fut pas jugée nécessaire. L'extirpation chirurgicale de la graisse herniée fut effectuée dans 89 cas.

(3) Dans 39 cas qui avaient des nodules douloureux associés à l'arthrite chronique, on obtint un soulagement d'intensité variable à l'aide d'injections anesthésiques.

(4) Pour le diagnostic différentiel il est essentiel qu'on connaisse tous les antécédents, qu'on fasse un examen physique détaillé, et qu'on procède à des examens radiologiques réguliers. Parmi les nombreuses causes de la douleur lombo-sacrée, non reconnues auparavant, étaient des kystes post-traumatiques comprimant le nerf sciatique, un disque intervertébral luxé, une arthrite, et l'appendicite retrocécale.

(5) La proportion des cas de hernie de la graisse sousaponévrotique dans ce groupe est probablement au dessus de la normale du fait que de nombreux malades furent envoyés à l'auteur parce qu'on connaissait son intérêt à cette question. Le nombre élevé des cas suggère cependant que souvent la douleur lombo-sacrée non diagnostiquée appartient bien à cette catégorie; de plus, on trouve dans la littérature des cas qui furent soulagés par le procédé décrit, sans que le diagnostic ait été précisé.

Hernia del tejido adiposo subfascial como causa del dolor de la región lumbo-sacra

SUMARIO

(1) Se discute el diagnóstico diferencial y la incidencia de la hernia adiposa subfascial como causa del dolor en la región lumbo-sacra en 302 casos consecutivos.

(2) Muchos de estos casos tuvieron nódulos dolorosos y sintieron alivio después de inyecciones de soluciones anestésicas. En 92 casos los síntomas fueron controlados por inyecciones repetidas, y una operación no fué considerada necesaria. En 89 casos la grasa herniada fué extirpada quirúrgicamente.

(3) En 39 casos de nódulos dolorosos conjuntamente con una artritis crónica fué conseguido alivio del dolor en grado variable por medio de inyecciones anestésicas.

(4) Una historia clínica completa, una exploración minuciosa, y un examen radiológico regular son esenciales para el diagnóstico diferencial. Entre otras causas numerosas de dolor lumbo-sacro, no reconocidas anteriormente, fueron: quiste post-traumático comprimiendo el nervio ciático, disco intervertebral dislocado, artritis y apendicitis retrocecal.

(5) La proporción de los casos de hernia adiposa subfascial en este grupo es probablemente elevada, debido a que muchos enfermos fueron referidos al autor por conocerse su interés en esta cuestión. El gran número de estos casos sugiere, sin embargo, que muchas veces el dolor lumbo-sacro no diferenciado pertenece a la categoría estudiada; se encuentran además en la literatura casos de dolor semejante, aliviados por el procedimiento descrito, sin que el diagnóstico hubiese sido precisado.