

PROCEEDINGS OF THE NORTHERN ORTHOPEDIC
ASSOCIATION AT ITS XIII MEETING IN HELSINGFORS,
FINLAND, 29th JUNE, 1931

EDITED BY
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The meeting was opened by the chairman, surgeon in chief
H. Bardy, M. D., Helsingfors.

P. GUILDAL, COPENHAGEN:

LIPO-ARTHROITIS GENUS

In England, where the notion despite its French origin is chiefly used, »*dérangement interne*« of the knee is understood as a traumatic disorder of the parts constituting the knee-joint.

This notion, originally including a great number of various disorders, has continually become less comprehensive and can hardly be said to have any justification now. Originally »*dérangement interne*« comprised luxation of the menisci, ruptures of the ligamenta cruciata, ligamenta lateralia, fracture of the eminentia intercondyloideae tibiae, disorders that now all are differentiated as separate facies morborum, and moreover traumatic disorders of the infrapatellar pad of fat, which in my opinion far more frequently than generally supposed is the site of posttraumatic conditions giving rise to symptoms. The disorders have generally been included under the notion of traumatic arthrosis, but *Diamont Berger* and *Sicard*¹⁾ separate out lipoarthritis traumatica genus, which may occur in various forms and is localised to the said pad of fat.

This pad of fat, which is of an individually varying size, is

¹⁾ Revue d'orthopédie. Jan. 31. Tome XVIII.

lying against the præspinal part of the tibia below, against the non-articulating part of the patella upwards, against the ligamentum patellae inf. in front of the joint, and at varying width to the sides but always on either side of the ligamentum patellae inf. It is easily disconnected from the ligament and the tibia but is adherent to the capsular ligament. It lies within the ligament but is covered by the synovial membrane towards the joint; it has two lateral elongations: the ligamenta alaria,

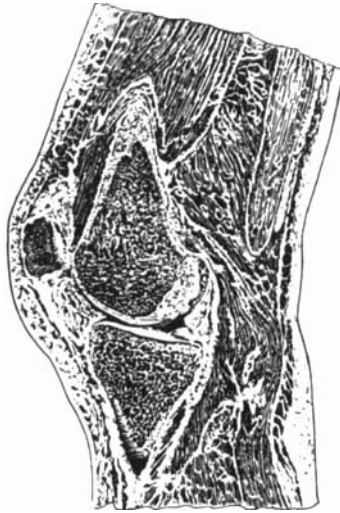


Fig. 1.

which run from the lower border of the patella downwards to the foremost part of the meniscus, and the ligamentum adiposum, which runs from the lower part of the patella to the fossa intercondyloideae forming a continuation of the plane formed by the lig. cruciatae. During fetal life up to the 4th month a wall is formed dividing the knee-joint into a medial and a lateral part. The pad of fat on the anterior aspect is plastic and highly alters its shape according to the various positions of the knee. This fact has been studied by *Smith*, *Berger*, and *Sicard*, who examined the conditions in frozen corpses. The pictures reproduced here originate from their

paper. The considerable alterations of shape to which the pad of fat is submitted are seen here both in extended position (Fig. I), in flexion at a right angle (Fig. II), and in flexion at an acute angle (Fig. III), but it will also be understood from the figures that on quick movements the plastic fat may be jammed or »pinched« between the articular surfaces. The consequences of these traumata may be an alteration of the adipose tissue, partly through the formation of a sort of fringes or frills; the adipose tissue of the latter is transformed, an

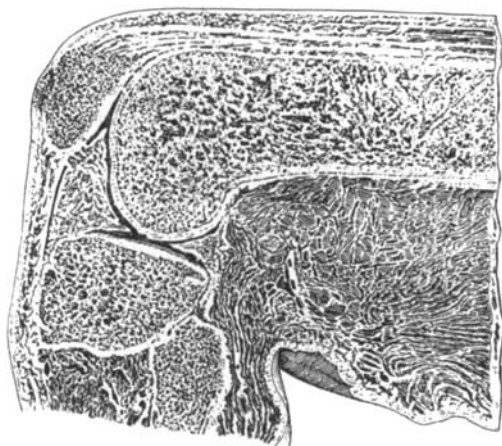


Fig. 2.

increase of the fibrous tissue occurring so that they become firmer and now are still more liable to be »pinched«. The condition can be compared with the condition to which an adherent lump of omentum is exposed in a hernia; and the fat here and in a knee-joint may assume almost the same appearance. Once these alterations of the adipose tissue have been established the constant traumata will give rise to a chronic arthrosis with the consequences incidental thereto.

The clinical picture afforded by this disorder varies according to the development of the disorder. If a single fringe results from a trauma and if it is fairly large it will readily be jammed and give rise to symptoms of incarceration, which rarely can

be distinguished from incarceration through some other cause, and it is also characteristic that the diagnosis that the incarceration is due to a »fringe of fat« very rarely has been established. Case No. I can be regarded as a typical example.

I. A. B-H. ♀ aged 22 years; she is a pupil at a ballet school and during exercise she hurt the lateral side of her right knee; pain and tenderness occurred, increasing during the following days for which reason she ceased taking part in the exercise.

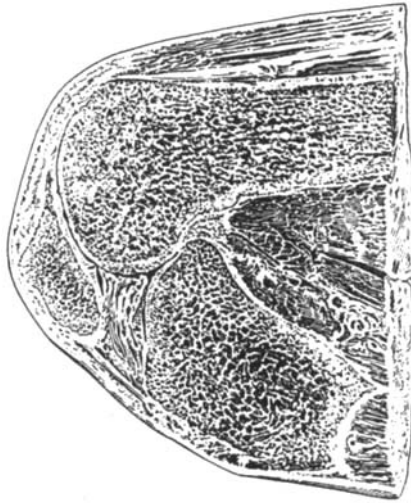


Fig. 3.

No swelling or suggillation is said to have been present. On examination here she complains of: tenderness, pain on going upstairs and when the weight of the body is resting only on the right leg. When she walks on a level road there is practically no discomfort, and she can ride on bicycle without any discomfort. Several times there has been fixation in a slightly flexed position; it is easily obviated.

Objective signs:— Neither of the lower extremities shows anything abnormal on inspection. In extended position a joint-mouse, the size of a plum-stone, is felt at the lateral end of the

right patella, it is cartilaginous and can be moved from side to side, it is not tender; at flexion of about 30° it slips in with a faint pop. All movements in the knee are carried out without pain and to the full extent; there is no accumulation of fluid in the joint or impact of the patella, and there is no lateral mobility. There is no visible atrophy of the right leg. Both patellae are very mobile from side to side but there has never been any cases of luxation.

Under ethyl chloride — ether anaesthesia arthrotomia genus is performed through a lateral incision immediately above the palpated joint-mouse; the latter appears to consist of a hard lump of fat, the size of the end of a thumb, and rather mobile. It is sessile and is attached to the foremost part of the joint reaching the anterior aspect of the condylus lateralis. The stalk is angiotribe with Pean's forceps and is cut through without any hæmmorrhage. No suturation of the stalk. The capsular ligament is united by means of silk suture, the skin by means of fish-gut suture. Dressing. The course was uncomplicated.

After-treatment with mechanical training of the mobility of the knee. When the patient was discharged 26 days after the operation the mobility of the knee was unrestricted.

After-examination 2 years and 9 months afterwards:—

The patient has danced a good deal, both ballet and — especially — modern dances; the latter cause more inconvenience than the former, the patient getting a sensation of instability in both knees when she has danced for some time, but hardly more in the knee operated upon than in the sound one. Moreover she complains of sensations in other joints sometimes, e. g. when she has been lying in an awkward posture during the night.

Examination of the knees reveals nothing abnormal; ÷ grinding, ÷ abnormal mobility, ÷ accumulation of fluid. The contours are identical. The pad of fat round the ligament. inf. patellae on either side is highly developed as compared with the lean legs, perhaps more so on the right side than on the left. There is no muscular atrophy. — —

In this case owing to the anamnesis and the findings on palpation the diagnosis of joint-mouse is made, but it proves to be

incarceration caused by a peduncular lump of fat. This possibility should perhaps have been considered, as the symptoms of incarceration were somewhat less violent than is generally seen in cases of incarceration of cartilage and as there was no accumulation of fluid in the knee after the attacks, two conditions that are said to indicate incarceration of fat.

In case not a single »fringe« is found, but numerous frills are formed the disease is — as is known — termed *Hoffa's disease*, and the symptoms are different. These numerous frills will readily be pinched and give rise to pain; the latter arises especially on forced movements. The cases may occur after a single trauma but occur most frequently after repeated minor traumata. *Keith* states that acrobats are especially liable to this condition. Besides the case reported below I have seen cases occur in the knees of female pupils for dance after strenuous training in several instances, in which the symptoms were localised to the side of the ligamentum patellae inf. so absolutely that it was possible to establish the diagnosis of lipo-arthritis genus with great probability. The following case record is a typical example of a rather severe case of *Hoffa's disease*:—

II. E. G. ♀ aged 18 years; has taken lessons in ballet for 1 year. From April 1929 there has been pain in both knee-joints, which has been aggravated continually despite 2 months' summer holidays.

Objective signs:— There is a circumscribed, elastic swelling immediately below the patella, no doubt under the ligamentum patellae. There is no accumulation of fluid in the knee. The mobility is free.

Under ethyl chloride — ether anaesthesia arthrotomia genus dupl. is performed through a curved incision on the inner side of the patellae with opening of the joint medial to the lig. patellae inf. The fat here is found to contain fibrous strands, and to be rather hard and set with fringes projecting towards the joint. The greater part of the fat is removed, and a few remaining fringes are removed. It is somewhat difficult to draw out the fat from the lateral side. This is less successful on the right

side than on the left. Suture of fascia and skin. Compressing woollen bandage.

The course was uncomplicated. 2 months afterwards the mobility of the knees — after massage — is completely free. No impact. Mechanotherapy was then employed in order to train the muscles. — —

When I thought that I ought to operate in this case it was due to the fact that her condition absolutely prevented her from continuing her ballet lessons, which she was very reluctant to give up, and it was moreover due to *Keith's* statement that removal of the infrapatellar fat does not leave any impairment of function. *Berger* and *Sicard*, whose paper was published later on, speak in conformity herewith and report a case record.

In conclusion I would mention lipo arborecens genus, which *Berger—Sichard* together with the conditions referred to subsume under the notion of lipo-arthritis traumatica genus, even if it may be doubtful, especially in the case of the latter, whether it always is traumatic, its tuberculous origin being probable in certain cases. *Solaro* has in a few cases demonstrated tuberculosis in *Hoffa's* disease.

I shall not enter into the details of the etiology, symptomatology or treatment of the disorder, as this has been done in a classical manner in *Berger* and *Sicard's* work; but when I desired to publish this communication it was, besides being a caustic contribution, due to the desire to draw the attention to this disorder, which by no means is rare in its milder forms.

Besides in the female pupils for dance referred to I have in cases of pain in the knee repeatedly believed to be able to diagnose lipo-arthritis traumatica genus, sometimes after a single trauma, sometimes, as for instance in an eager female rider, after frequent minor traumata.

Lastly, in a patient who had a very flaccid »paralytic« knee and complained of pain in the knee localised to the part round the lig. patellae inf., I have on performing arthrodesis of the knee seen that there were several thickened »fringes of fat«, which were felt to be hard and infiltrated.

In cases where the disorder does not yield to conservative

symptomatic treatment and where it is invaliding a surgical removal of the fat should be considered, and this can be done without impairment of the function of the joint.

DISKUSSION:

R. Hanson, Varberg:

The condition just described by Guildal is generally called Hoffa's disease in Sweden after Hoffa's publication in 1904. He who first described it was, however, as far as I know the Englishman Annandale in 1887. With regard to treatment it appears to me that as a rule the symptoms can be brought to disappear only through excision of the parts of the plicae alares that seem to have been incarcerated.

Nilsonne, Stockholm:

The symptom picture described by Guildal is hardly mentioned in the text-books. It is, however, not especially rare. Some years ago I had a case during treatment of which I happened to get on the track of this process.

It was a girl, about 20 years of age, who had certain lock symptoms in one knee. At the medial side of the patella a free body, the size of a bean and of a hard consistency, was palpated; it could be moved up and down to some extent. On certain movements of the knee the palpated body disappeared. The patient stated that there was tenderness on pressure over the body. The skiagrams were negative. According to the diagnosis of free body of cartilaginous consistency arthrotomy was performed. There was, however, no joint-mouse in the joint, the meniscus was normal, the synovial membrane was injected and the plicae alares were hypertrophic. As no joint-mouse was found despite anxious searching I was just going to close the joint when it was seen by a mere chance on flexion of the knee how a lump of fat, the size of an asparagus top, was jammed between the patella and the condyle of the femur; on extension of the knee the lump was tightened until it was of a tense consistency and was only released from the jamming when the

knee was flexed. It was ligated at the place where it was fixed and was removed. Later on I have again seen the patient, who has been free from lock symptoms after the operation.

Later on I have operated a case after the diagnosis of luxation of the meniscus, but it proved to be a similar case of lipoarthritis.

R. Hansen, Varberg:

In positive cases I have thought that I ought to make large excisions of the adipose tissue owing to diffuse alterations of the latter. But it appears to me that so radical an intervention only is justified in a minority of cases. As a rule it will be sufficient to perform partial synovectomy and partial excision of the plicae alares.