

PARTIAL SYNOVECTOMY OF THE
KNEE - JOINT

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For over 50 years synovectomy, both partial and total, has been used in cases of chronic hydrops of the knee-joint. During that time practical experience of the indications for the operation have been gained.

In spite of a vast number of physical, chemical and pathological investigations, we still know very little about the physiology and patho-physiology of synovial fluid.

Theoretically, hydrops can occur as a result either of increased production of the synovial fluid, or of decreased resorption. A combination of these two possibilities must also be considered. We know practically nothing about how the synovial fluid is produced.

Fluid is resorbed from the knee-joint, partly via the blood-vessels and partly via the lymphatics. Salts and similar substances dissolved in the joint fluid are resorbed via the former, and substances with bigger molecules via the latter. Since, in most pathological conditions there is a hyperaemia, certain substances should have an increased resorption through the blood vessels. However, studies of resorption using contrast media show that in some cases resorption of the substance is reduced, and in others it is increased, without any apparent clinical or pathological difference between the cases. In certain

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pathological conditions, e.g. infective arthritis, resorption through the lymphatics is reduced by obstruction by precipitated fibrin, etc. The investigations of *Hultén* and *Gellerstedt* have drawn attention to blockage of the lymphatics by the accumulation of breakdown products from the joint cartilage: *Synovitis chondrodetrítica*.

In view of our very defective knowledge of the physiology and pathophysiology of the condition, each operation aims to produce better drainage from the joint cavity, the choice depending on the individual surgeon. There are no absolute indications. The results of the operations must be considered against this background.

TABLE 1.

| | Polyarthritis: 14 patients 15 synovectomies | »Hydrops of the knee« 19 patients 20 synovectomies |
|--|---|---|
| Duration of condition before operation | 5.0 years | 5.6 years |
| Age at operation | 37.7 years | 32.8 years |
| Time between operation and examination | 4.4 years | 4.7 years |

The material presented here consists of 35 synovectomies in 33 patients. (Table 1). In order to judge the late results it is important first to divide the material according to aetiology. One group can be separated at once, namely, cases with polyarthritis. Of these there were 14 cases with 15 synovectomies.

In the follow-up examination of the polyarthritis cases (14 cases were examined) 6, or about 43 %, had an effusion. In nearly every case without effusion, its disappearance after synovectomy had been slow, and one could not therefore say that it was a direct result of the operation. No difference could be found in the general course of the polyarthritis or in the sedimentation rate between the groups with and without effusion.

It does not seem possible, from the case reports, to divide

the remaining 20 cases according to their aetiology. They are very probably a heterogeneous collection. (Table 2). 7 cases gave a definite history of trauma, related to the condition. 4 cases had a typical intermittent hydrops. One case had an osteoarthritis. In the remaining 8 cases no cause for the chronic effusion could be found.

TABLE 2.

| | Effusion | No effusion |
|---------------------------------|--------------------|-------------|
| Trauma | 5 | 2 |
| Intermittent hydrops | 2 | 2 |
| Others (1 osteoarthritis) | 1 (osteoarthritis) | 8 |
| | 8 | 12 |

In some cases the patellar cartilage was inspected at operation, and if changes were found chondrectomy was done in addition to the synovectomy. (Table 3). The numbers are too small for one to draw any definite conclusions from them. The tendency to give a worse result, which can perhaps be detected in the cases where synovectomy was combined with chondrectomy may of course be due to the original condition.

The histological picture shows in all the cases a marked uniformity. It is the picture of a chronic so-called synovitis with slight oedema, connective tissue proliferation in the sub-synovial tissue and round cell infiltration. Sometimes there is a villous hypertrophy.

TABLE 3.

| | Effusion | No effusion |
|----------------------------|----------|-------------|
| Synovectomy | 3 | 8 |
| Synovectomy + Chondrectomy | 4 | 5 |
| | 7 | 13 |

The literature suggests that partial synovectomy is in most cases followed by a disappearance of the effusion. That this is by no means the case appears from the material presented here, where the desired result was obtained in only 60 % of the cases, although the synovectomy was only done after prolonged conservative treatment had been abandoned, and although the indications for operation were strictly limited. A better understanding of the physiology and pathophysiology of synovial fluid should lead to a sounder basis for the operation and therefore to better results.

SUMMARY

A brief account of the late results of 35 partial synovectomies of the knee-joint. Freedom from effusion was obtained in 60 %. A detailed account will be published later.

RESUME

Exposé sommaire sur les derniers résultats obtenus dans 35 cas de synovectomie partielle de l'articulation du genou. Dans 60 %, on a pu éviter des effusions. Un compte rendu détaillé sera publié ultérieurement.

ZUSAMMENFASSUNG

Eine kurze Mitteilung über die Spätresultate von 35 partiellen Synovektomien des Kniegelenks. In 60 % der Fälle wurde Ergussfreiheit erzielt. Ein ausführlicher Bericht wird später veröffentlicht werden.