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Haemarthrosis of the knee joint: Diagnostic and theraepeutic advantages of arthroscopic technique

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Diz ekleminin hemartrozu: Artroskopik tekniğin teşhis ve tedavi avantajları

Çoğu vakada intraartiküler kemiksel lezyon olmaksızın posttravmatik hemartrozda sebep ileri derecede bir bağ lezyonudur. İyi bir rehabilitasyon sağlanabilmesi için, kronik instabilitelerden ve dejeneratif artrozdan sakınılabilmesi için erken ve tam bir teşhis gereklidir. Artroskopi ile tam bir teşhis konabilmekte, tedavinin sonucunu ve yaralanmaya yaklaşımı etkileyecek bilgiler edinilebilmektedir. 1238 vakalık artroskopi serimizde 252 (% 20. 3)'si hemartroz nedeniyle yapılmıştır. Vakaların % 68'inde tam teşhis sadece artroskopi ile konmuştur, yani diz yaralanmalarının takriben üçte birinde sadece klinik muayene ile teşhis konsaydı yanlış veya eksik teşhis konacaktı. 252 vakalık serimizde % 23 izole ön çapraz bağ (ÖÇB) lezyonu, % 28 anteromedial instabilite, % 8 parsiyel ön çapraz bağ lezyonu, % 5 arka bağ lezyonu, % 15 iç yan bağ lezyonu, % 11 sadece sinovial yırtık saptanmıştır. % 5 vakada kronik ÖÇB instabilitesi vardı. % 4 vakada osteokondral fragmanlar saptadık.

Anahtar Kelimeler: *Hemartroz, bağ lezyonu, artroskopi*

Posttraumatic haemarthrosis without intraarticular bony lesion is caused by a severe ligament injury in most of the cases. An exact and early diagnosis is necessary to guarantee the best rehabilition of the knee joint and to avoid chronic instabilities and degenerative arthrosis. Arthroscopy gives an exact diagnosis of the intraarticular lesions and allows to obtain information that could influence the therapeutic consequence and approach to the injury. In a series of 1238 arthroscopies 252 (20, 3%) were done for haemarthrosis. In 68 % of these cases exact diagnosis could only be established by arthroscopy, so that in approximately one-third of the knee injuries an incorrect or incomplete diagnosis would have been made by only a clinical examination of the joint. In our series of 252 cases 23 % had an isolated complete anterior cruciate ligament (ACL) injury, 28 % had anterior- medial instability, 8 % partial CL lesions, 5 % posterior ligament injuries, 15 % medial collateral ligament injuries, 11 % had only synovial tears. 5 % of cases had chronic ACL instability. In 4 % we found osteochondral fragments.

Keywords: *Haemarthrosis, ligament injury, arthroscopy*

The occurence of an haemarthrosis in the knee is usually the first sign of a severe internal knee injury. For this reason, it requires a precise and early diagnostic clarification (1, 2, 3). First, an X-ray will be made in order to be able to exclude any possible osseous traumatic injuries, followed by a clinical stability examination. The Lachmann-test is definitely a very good measuring scale for injuries of the cruciate ligament. Often, however, it does not produce the desired results because of painful muscular tension or false locking involved. Another non-invasive diagnostic test would be by a magnetic resonance examination, which, however, would be too expensive as a routine examination, and furthermore is not available everywhere.

Arthroscopy, on the other hand, is a reasonably priced technique. A surgeon experienced in the arthroscopic method will thus be able to make an almost 100 % safe diagnosis as to a possible internal knee injury, and will be in the position to carry out a therapeutic treatment straight away.

Material and method

In the context of a retrospective study carried out in the Department of Trauma Surgery at the University Hospital of Graz, it was revealed that within three years, in 252 cases out of a total of 1238, arthroscopy was carried out because of a haemarthrosis. On comparing the pre-operative clinical diagnosis with the lesions found during the arthroscopic intervention, it was found that only one third of the solely clinically established diagnoses were exact. In the majority of the cases, either a precise or correct diagnosis could only be arrived at by means of arthroscopy; i. e. that the clinical diagnosis was extended by the finding of further, and often considerable additional injuries. For the above mentioned reasons, we advocate the carrying out of arthroscopy for diagnostic purposes even in cases of clinically obvious instability, because it is the only way to diagnose both concomitant fresh and chronic meniscus and/ or cartilaginous lesions.

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The arthroscopy is carried out in a fluid medium under general of regional anaesthesia so that the diagnosis arrived at in this way can be followed up by immediate surgical therapy if required.

Results

In the 252 above-mentioned cases of knee injuries involving haemarthrosis, 83 % showed injuries of the ligament. In 11 % of the cases, only synovial ruptures could be found. In 10 of the patients, an osteochondral fracture was the cause of the haemarthrosis. These fractures were not visible on X-ray pictures seven after rechecking in the light of the evidence of the arthroscopic examination. Four patients exhibited a situation appertaining to a spontaneously repositioned patella dislocation. They described an instability as a sudden "giving way" attack.

A breakdown of the ligament injuries showed the following results:

In 28 % of a total of 210 instabilities, a so called isolated lesion of the anterior cruciate ligament was found. In another 8 %, a partial, i. e. at the most 50 % rupture of the cruciate ligament was revealed, while 33 % showed a complex anteromedial instability. In a further 18 %, an isolated medial ligament lesion was identified, and 6 % exhibited an injury of the posterior cruciate ligament.14 % of our patient population suffered from a chronically deficient cruciate ligament with a fresh haemarthrosis after renewed injury. Only in one case had it been possible anamnestically to discover this older injury of the ligament. Isolated meniscus lesions involving heamarthrosis are rare, and are practically only found in young patients with a peripheral detachment of the meniscus.In patient population, there was one patient with a complete desinsertion of the medial menicus in combination with a subsynovial cruciate ligament rupture.

Discussion

The advantage of arthroscopy in cases of a haemarthrosis lies in the possibility of establishing a definite diagnosis, which includes locating, at the same time, concomitant intra-articular injuries. This allows for an appropriate planning of all further surgical steps to be taken (4, 5). In cases where further surgical treatment is not indicated, the treatment is continued conservatively, but it still allows for the haemarthrosis to be washed out, thus avoiding the enzymatic damage which the haemarthrosis would cause to the cartilage.

Another advantage apart from the above mentioned diagnostic possibilities, is that many operations can be carried out arthroscopically; or at least the extent of the incision can be kept to a minimum in cases of an arthroscopically assisted open procedure. Owing to the fact that by means of arthroscopy the view of the meniscus and cruciate ligament is extremely good, the arthroscopic procedure in meniscus and cruciate ligament surgery allows for a much more subtle procedure.

Conclusion

It can be said that the usual time required to carry out diagnostic arthroscopy is 10 minutes. This means that within a very short time, an exact diagnosis of an internal knee joint injury can be arrived at, even in so-called clinically secured diagnoses, and there will not be any surprising fact later on (6).

References

1. Benedetto, K. P., W. Glötzer, G. Sperner: Die bedeutung der Akurtarthroskopie für die verifizierung der frischen isolierten Kreuzbandruptur. Akt. Traumat. 14: 227-231, 1984.
2. Cotta, H., W. Puhl, F. U. Niethard: Der einflub des hamarthros auf den Knorpel der Gelenke. Unfallchir. 8: 145-151, 1982.
3. Gaudernak, T.: Der posttraumatische Hamarthros des Kniegelenkes - arthroskopische Abklarung der Ursachen. Unfallchir. 8: 159-169, 1982.
4. Mohinder, A., J. Lawrence: Diagnostic Arthroskopy in Sport Injuries. Orthop. Clinics of North America. Vol. 11 Nr. 4 771-785, 1980.
5. Oehler, W. D., P. Janka: Arthroskopische diagnostik und therapeutische Konsequenz beim Haemarthros des Kniegelenkes. Unfallchir. 8: 96-98 (Nr. 2), 1982.
6. Passler, J., M. Fellinger, W. Seggl: Der posttraumatische Hamarrhros des Kniegelenkeseine Indikation zur Arthroskopie. Akt. Traumatol.19: 135-138, 1989.

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