

Chylous Joint Effusion of the Knee

A case report and literature review

F. Tillmann, F. Cagienard, R. Melzer, M. Scaglioni, J. Bering

Introduction

Chylous or milky joint effusions are extremely rare, and there exist only very few case reports in the literature. Here we describe a patient with accelerated ipsilateral anterior knee pain after implanting a total hip prosthesis and chylous effusion in the knee joint.

Patient

A 54 year old female patient suffered anterior knee pain over three months after an ipsilateral hip prosthesis was implanted. The patient denied a direct or indirect trauma of the knee, while she detected a painful swelling of the knee directly on the first day after surgery. Initially the swelling was assumed as a postoperativ suffluent hematoma and treated with oral analgetics by her general practitioner (gp). A week before the patient was seen in the orthopedic follow up, her knee was punctured by the gp, showing "milky fluid". The patient denied fever or shivering. The physical examination revealed a tender knee with a large effusion, no erythema, no warming. The knee motion was slightly decreased with extension/flexion 0/0/100°. The knee was punctured again in our clinic and showed white, milky fluid. The laboratory investigation of the joint-fluid revealed massive lipids without inflammation or cristalls and we established the diagnosis of a chylarthros. After exclusion of a lymphfistula the patient underwent conservative treatment. Eight months after first symptoms the patient was symptom-free without any deficits. The cause of the chylous effusion couldn't be determined.



Abb. 1./2.: Puncture results – milky fluid tinged with blood

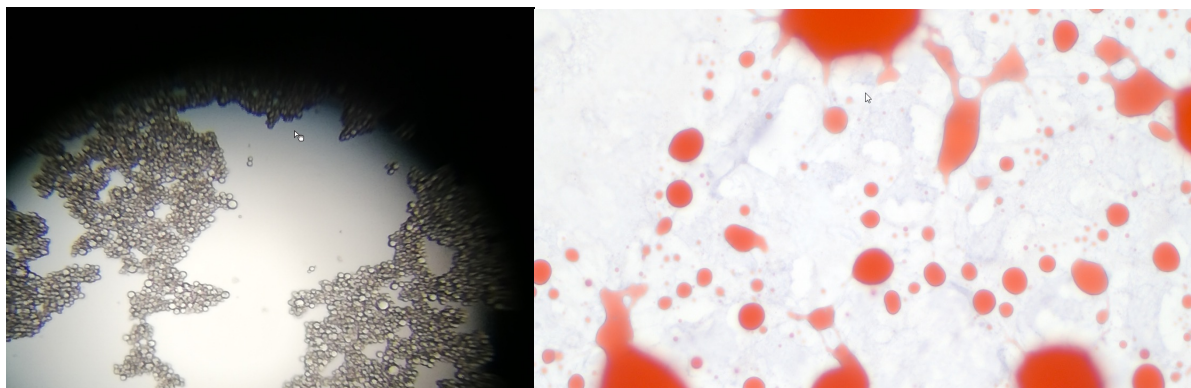


Abb. 3./4. Histopathological results: Oiled stain of the patient's synovial fluid. Large amount of lipids

Gelenk			
Punktionsort	-		Knie rechts
Farbe	strohgelb		rot
Transparenz	-		deutlich trüb
Beschaffenheit	-		viskös
Ec-Beimengung quantitativ	-	/µL	1658000
Zellzahl	50-200	/µL	705 +
Polynukleäre Zellen	-	%	77
Mononukleäre Zellen	-	%	23
Calcium-Pyrophosphat-Kristalle	keine		keine
Harnsäure-Kristalle	keine		keine
Anderere Kristalle	keine		Vergl. Bemerkung *
Malteserkreuze	-		keine
Apatit-Kristalle	keine		keine

Abb. 5: Laboratory results

Discussion

Increased lipid content of joint fluid, presenting as a macroscopically milky fluid is equivalent to a very rare chylous effusion^{1,2}. These cases are reported in patients with a traumatic joint injury involving the lymphatic system or in patients, who suffer a systemic lupus erythematosus, rheumatoid arthritis, filariasis or pancreatitis with peripheral fat necrosis^{5,6,7,8}. The largest series of patients with chylous effusions were described by Das and Sen⁴, who screened 25 patients with filariasis who suffered acute knee pain with inflammation but sterile effusion, all self limited. Synovial biopsies in these patients showed inflammatory changes and the lymphangiogram (n=5 patients) showed periarticular lymphangiectasia, varicosities of the popliteal system with a blind channel ending in the knee joint which suggests a lymphfistula. Diagnostic fluid aspiration and its laboratory investigation (oil staining) is mandatory to make the diagnosis (lipid concentration > 800mg/100ml (8g/l))⁴. Signs of systemic illness (fever, shivering) or pathological blood results (elevated WBC, CRP) may be seen, but are usually absent. Additional imaging for detecting insufficiency fractures (MRI, CT) or other bone pathologies are recommended.

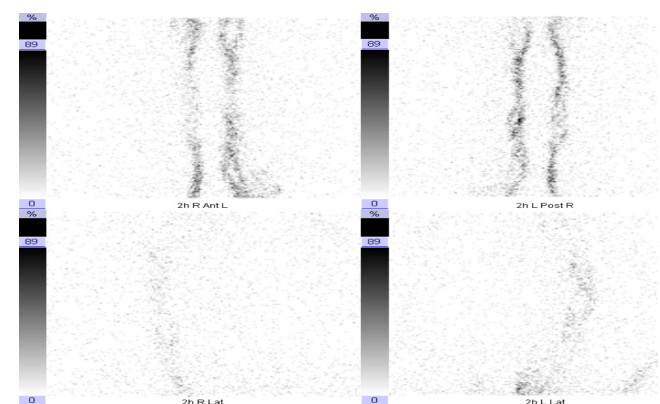


Abb. 6: Lymphoscintigraphy of both legs (98 MBq-Tc 99)

Conclusion

Chylous joint effusions are very rarely seen. The diagnosis is made with fluid-analysis (oil staining). Most of the cases seem to be the result of a direct or indirect trauma of the knee, affecting the lymphatic system. Still, patients without trauma but having a pancreas disease, rheumatoid arthritis or filariasis can suffer a chylous effusion, which tends to be self limiting under conservative treatment.

Referenz/Literatur

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