

**BLOCKED KNEE EXTENSION DUE TO A CYCLOPS LESION
IN A TOTALLY TORN ACL WITH NO PRIOR RECONSTRUCTION.
CASE REPORT**

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BLOCKED KNEE EXTENSION DUE TO A CYCLOPS LESION IN A TOTALLY TORN ACL WITH NO PRIOR RECONSTRUCTION. CASE REPORT (Abstract): The cyclops lesion, also known as localized anterior arthrofibrosis is a widely recognized complication of anterior cruciate ligament (ACL) reconstruction that may lead to a mechanical block. In this report, we describe a rare case, where the patient was suffering from progressive loss of knee extension without having any prior surgery. An arthroscopy revealed a completely torn ACL along with the presence of a cyclops lesion. Subsequently, the patient was treated by resection of the cyclops lesion and ACL reconstruction using hamstring-tendon graft which enabled the patient to regain stability and full joint range of motion. **Keywords:** CYCLOPS LESION, KNEE ARTHROSCOPY, TORN ACL, BLOCKED EXTENSION.

Cyclops lesion is a common complication of anterior cruciate ligament (ACL) injury and is generally observed in patients with a history of ACL reconstruction. It has a nodular appearance and consists of fibrous granulation tissue. Patients suffering from a cyclops lesion usually present with blocked knee extension which often is accompanied by a click when executing passive full extension. However, we encountered a patient with progressive loss of knee extension that was diagnosed with a cyclops lesion on a completely torn native ACL, the localized anterior arthrofibrosis occurring neither after reconstruction nor on a partially torn ACL.

CASE REPORT

A 22-year-old Caucasian male presented to our hospital with limited right knee extension. His medical history revealed a right knee traumatic episode 9 week earlier while playing soccer. Although the patient experienced a slight sensation of instability, there was no considerable impact on patient's functional abilities which allowed him to return to his routine sporting activities. Subsequently, the patient described pain and “limited stretch” of his right knee which started to worsen 2 weeks prior admission to hospital. The clinical examination revealed a positive Lachman test together with the presence of an audible “clunk” when performing passive knee extension. The active

knee extension executed by the patient was blocked at 15 degrees.

An arthroscopy was carried out which showed a completely torn ACL and a cyclops lesion arising from the anteromedial bundle at its tibial insertion (fig. 1) together with a radial lateral meniscus tear (fig. 2A). The earlier onset of the meniscal damage was confirmed by the identification of another associated longitudinal lateral meniscus lesion that was already scarred (fig. 2B). The cyclops nodule had a typical appearance of chondroid fibro-proliferative

tissue together with central neovascularization. A video record was also performed (fig. 3).

The patient came back for follow-up at 3, 6 and 12 months postoperatively. Clinical examination showed good stability with no excessive translation and the preservation of the full knee extension that was achieved postoperatively (0 degrees). An ipsilateral quadriceps atrophy and weaker knee flexion was encountered as expected, for which the patient was attending a rehabilitation program.

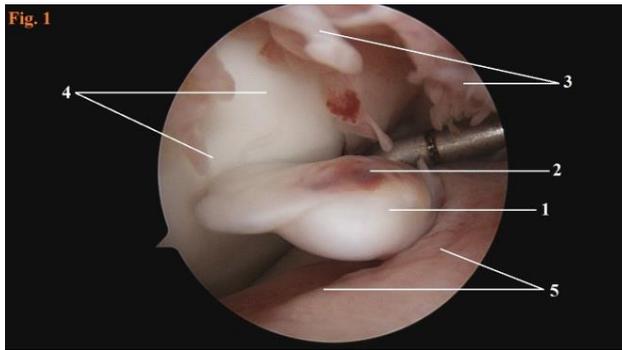


Fig. 1. Cyclops Nodule (patient is placed in supine position, right knee flexed at 60 degrees, view through anterolateral portal) 1. cyclops nodule 2. granulation vessels 3. adhesions to *ligamentum mucosum* remnants 4. external femoral condyle 5. anterior synovium at its tibial insertion

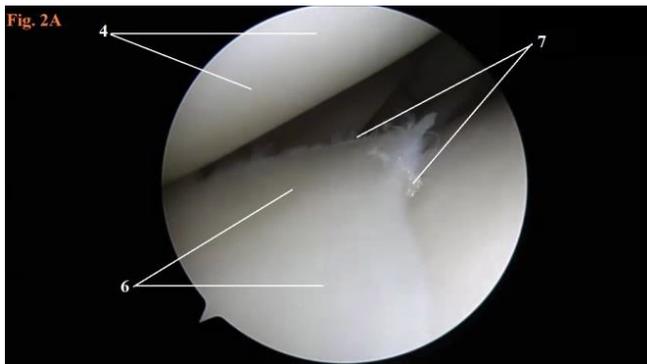


Fig. 2A. Lateral Meniscus Radial Tear (patient is placed in supine position, right knee flexed at 90 degrees, view through antero-lateral portal) 4. external femoral condyle 6. lateral meniscus 7. radial tear

Blocked knee extension due to a cyclops lesion in a totally torn anterior cruciate ligament with no prior reconstruction. Case report

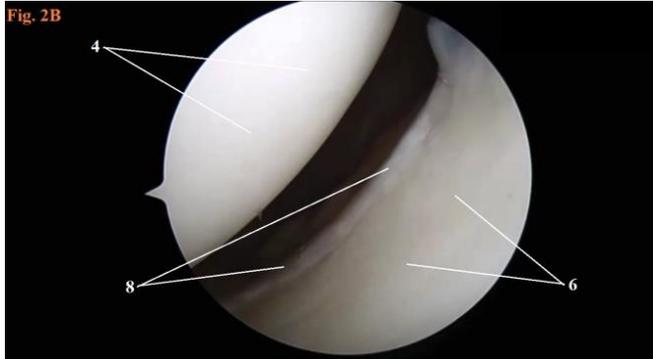


Fig. 2B. Lateral Meniscus Scarred Longitudinal Tear (patient is placed in supine position, right knee flexed at 90 degrees, view through antero-lateral portal)
4. external femoral condyle 6. lateral meniscus 8. scarred longitudinal tear

DISCUSSION

Previously published studies describe a variable incidence of cyclops lesions after ACL reconstruction ranging from 3.61% (1) to 46.8% (2). Conversely, there is limited evidence in the current literature describing cyclops lesions that occur on native ACLs with no history of surgery due to the rareness of this condition. The biggest pool of patients was recorded in 2007 which included a total of 10 patients with cyclops lesions in the absence of ACL reconstruction. (3) When investigating the etiology, recent studies have shown that a small intercondylar notch may contribute to cyclops formation (4), in addition to other already known underlying causes such as: ACL stump remnant, intra-cellular debris from the drilling of the ACL tunnels, non-anatomic tunnel placement that can lead to graft impingement (5-7). Even though measures are taken to prevent the issues, the cyclops lesion can remain clinically silent for an undetermined period and result in progressive loss of knee extension with different times of onset. This demonstrates the presence of other predisposing factors that were not determined yet. A loss of

knee extension may be also encountered among the following pathologies: torn meniscus fragments, meniscus cysts or mucoid cysts, villonodular synovitis or synovial hemangioma, synovial osteochondromatosis, Hoffa's disease, osteochondritis dissecans and different tumors. In our patient, we encountered lateral chronic meniscus tears, represented by one radial tear and one scarred longitudinal tear, which possibly may have contributed to the cyclops formation, as they could cause a degree of antalgic knee flexion and predispose to fibrosis. Due to the limited number of published cases regarding this condition (8-14), we believe any addition is crucial.

CONCLUSIONS

The findings of this case report together with previous reports demonstrate that cyclops lesions should be considered among the clinical differential diagnosis in patients with blocked knee extension.

Investigating the predisposing factors might aid in the diagnosis and in minimizing the incidence of cyclops lesions as a potential complication after ACL reconstruction.

REFERENCES

1. Sonnery-Cottet B, Lavoie F, Ogassawara R *et al.* Clinical and operative characteristics of cyclops syndrome after double-bundle anterior cruciate ligament reconstruction. *Arthroscopy* 2010; 26(11): 1483-1488.
2. Gohil S, Falconer TM, Breidahl W, Annear PO. Serial MRI and clinical assessment of cyclops lesions. *KSSTA* 2014; 22(5): 1090-1096.
3. Runyan BR, Bancroft LW, Peterson JJ, Kransdorf MJ, Berquist TH, Ortiguera CJ. Cyclops Lesions That Occur in the Absence of Prior Anterior Ligament Reconstruction. *Radiographics* 2007; 27(6): e26
4. Fujii M, Furumatsu T, Miyazawa S *et al.* Intercondylar notch size influences cyclops formation after anterior cruciate ligament reconstruction. *KSSTA* 2015; 23(4): 1092-1099.
5. Van Dijk RA, Saris DB, Willems JW, Fievez AW. Additional surgery after anterior cruciate ligament reconstruction: can we improve technical aspects of the initial procedure? *Arthroscopy* 2008; 24(1): 88-95.
6. Wang J, Ao Y. Analysis of different kinds of cyclops lesions with or without extension loss. *Arthroscopy* 2009; 25(6): 626-631.
7. Pinczewski L, Salmon Lucy, Maeno S, Hui Catherine. Anterior Cruciate Ligament Reconstruction with Hamstring Tendons. In: W. Norman Scott, eds. *Inall & scott Surgery of the Knee* Philadelphia: Elsevier Inc, 2012, 401-402.
8. Pyrko P, Strauss EJ, Struhl S. Inverted Cyclops Lesion without Extension Block: A Case Report and Literature Review. *Bull Hosp J Dis* 2015; 73(1): 61-64.
9. Zhang C, Xu H, Wang Y, Zhang Q. Misdiagnosis of an atypical cyclops lesion 4 years after single-bundle anterior cruciate ligament reconstruction. *Orthopedics* 2012; 35(5): e740-743.
10. Simpfendorfer C, Miniaci A, Subhas N, Winalski CS, Ilaan H. Pseudocyclops: two cases of ACL graft partial tears mimicking cyclops lesions on MRI. *Skeletal Radiol.* 2015; 44(8): 1169-1173.
11. Muellner T, Kdolsky R, Grossschmidt K, Schabus R, Kwasny O, Plenk H Jr. Cyclops and cyclopid formation after anterior cruciate ligament reconstruction: clinical and histomorphological differences. *KSSTA* 1999; 7(5): 284-289.
12. Veselko M, Rotter A, Tonin M. Cyclops syndrome occurring after partial rupture of the anterior cruciate ligament not treated by surgical reconstruction. *Arthroscopy* 2000; 16(3): 328-331.
13. Tonin M, Saciri V, Veselko M, Rotter A. Progressive loss of knee extension after injury. Cyclops syndrome due to a lesion of the anterior cruciate ligament. *Am J Sports Med* 2001; 29(5): 545-549.
14. Morizane K, Takahashi T, Konishi F, Mori T, Yamamoto H, Miura H. A case report: locking because of cyclops syndrome occurring after partial rupture of the anterior cruciate ligament. *J Pediatr Orthop B.* 2014 Jan 8. Epub.