Reviewer's report

Title: Anterior Cruciate Ligament Reconstruction in a Patient with Athetoid Cerebral Palsy: A Case Report

Version: 1 Date: 1 September 2011

Reviewer number: 1

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The authors reported a case of the patient with athetoid cerebral palsy receiving ACL reconstruction. It may be true that there have been no reports describing such a case. However, the rarity of the reports does not directly mean that it is worth publishing. The article must contain valuable information that readers can get through it.

Major criticism:

1. There is no discussion about why there have been no reports describing a case of the patient with athetoid cerebral palsy receiving ACL reconstruction. Is the incidence of soft tissue injuries, including ACL injury, very low in patients with athetoid cerebral palsy, probably due to relatively low physical activity? Do the patients with athetoid cerebral palsy cope with ACL deficient knees compared with people not having athetoid cerebral palsy? Do the surgeons hesitate to perform ACL reconstruction for these patients?

2. The patient did not have pain in the injured knee soon after initial injury, but started to complain pain and feeling of instability 2 years after initial injury. Why? The patient was found to have lateral meniscus injury together with ACL injury at the time of surgery. It is unlikely that ACL injury itself is the cause of pain, but concomitant meniscus injury is usually the cause of knee pain. So it is probable that lateral meniscus injury developed after ACL injury, causing knee pain. If so, considering that ACL reconstruction is challenging in a patient with cerebral palsy as the authors pointed out, arthroscopic meniscectomy without ACL reconstruction should have been considered before surgery. Of course, the indication for ACL reconstruction for the patient with cerebral palsy has not been determined, yet. So the reason that the authors chose this procedure should be described and discussed.

3. The description in the case presentation is very irregular and unskillful. For example, physical findings should be described before the findings on MRI.

4. The authors mentioned that involuntary movement made objective evaluation of ACL function difficult to perform using accurate testing or instrument.

   1) A local physician diagnosed ACL tear. How did he/she make an accurate diagnosis?

   2) The manual testing and the examination using arthrometer under anesthesia are especially important in this. The results of manual testing under anesthesia
before surgery and those of KT-1000 or KT-2000 before surgery and at the time of second look should be described.

3) The purpose of the stress radiography the authors used is to show the result of anterior drawer test quantitatively. In the situation that anterior drawer test could not be performed accurately, how could the authors guarantee the accuracy and reliability of the results of the stress radiography.

5. The reviewer does not think that the rehabilitation program the authors used for this patient is justified.

1) The authors applied cast immobilization at 20 degrees for 3 weeks to inhibit sudden joint motion and stress on the reconstructed ACL. Within the cast involuntary contraction of the quadriceps muscle cannot be prevented in this case. Isometric contraction of the quadriceps muscle at 20 degrees of knee flexion causes anterior translation of the tibia. So the cast immobilization at 20 degrees of knee flexion cannot avoid the stress on the reconstructed ACL due to the isometric contraction of the quadriceps muscle, which contradicts with the purpose of cast immobilization in this case.

2) The authors did not describe the length pattern of the each graft during the motion of the knee before the fixation of the tibial side during surgery. If the length change was minimal, the restriction of extension for 3 months was not justified.

Minor criticism:

1. Regarding 2. in Major criticism, the MRI findings on the menisci should be described. Also, how the authors dealt with lateral meniscus tear during surgery should have been described.

2. Line 28 and Line 60: “regardless of age ---“ instead of “regardless age ---“

3. Line 83: The reference of IKDC score should be described, because scoring system of IKDC score have been amended.

4. Line 85: What is “popliteal angle”?

5. Line 89: The area and degree of articular cartilage degeneration should be described.

6. Line 126: What do the authors want to express by the term “tension”?

7. The numbering of the figures is different from that in the figure legend in the text.

**Level of interest:** An article of limited interest

**Quality of written English:** Not suitable for publication unless extensively edited