Original Article

Clinical Presentation and Management of Meniscal Injuries in Enugu, South-East Nigeria

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Abstract

Background: Reports on any aspect of management of meniscal injuries are scarce in Nigeria, though the anecdotal experience is that occurrence of meniscal injuries is not rare. Meniscal repair is the preferred option following meniscal injury due to the long-term harmful effects attributed to partial meniscectomies. Meniscal repair in the setting of an isolated meniscal injury is also reputed to give a satisfactory return to preinjury levels of about 91.3%. Meniscectomy has been reported to be associated with long term symptoms and functional limitations. Current treatment trend involves conserving the meniscus where and if possible. Despite this, arthroscopic partial meniscectomy is said to be one of the most common orthopaedic procedures worldwide. Indications for meniscal repairs have been well developed over the years and include factors like duration and pattern of the tear among other features. We present a study of the management of 16 patients who had surgery for meniscal injury over 1 year. **Aims and Objectives:** To determine the difference in short term outcome for patients who had meniscal injuries following arthroscopic treatment using the Tegner Lysholm score. **Materials and Methods:** Our work was a retrospective, descriptive study of all our patients who had surgery for meniscal injuries from December 1, 2018 to November 30, 2019. We recruited qualified patients into the study and extracted relevant information from their records. Data retrieved included age, sex, aetiology, presenting complaint, duration before the presentation, intra-operative arthroscopic findings, the treatment offered and the difference in the patient's Tegner Lysholm knee score evaluated preoperatively and at 6 months post-treatment. **Results:** In the study period, 16 patients had arthroscopic surgery for complaints of persistent knee pain. The majority (75%) of the patients were aged between 20 and 40 years. Most were male (88%) and had their injuries playing football (63%). The presentation was late in most cases (75%), and most of the patients had complex, irreparable tears at arthroscopy. An associated rupture of the anterior cruciate ligament was found in 25% of the patients. Majority of the patients had partial meniscectomy alone. Only two patients (12.5%) qualified for and had meniscal repairs using the outside-in technique. Most of the patients had a poor Tegner Lysholm knee score preoperatively. Post-operatively, at 6 months follow-up, all the patients demonstrated a short-term improvement in the Tegner Lysholm score. Our study indicates that the presentation of meniscal injuries is often delayed in our environment. Most of the patients who present with these injuries do not qualify for meniscal repair as they often have complex, irreparable tears. These patients have partial meniscectomies with short term relief of their complaints. **Conclusion:** Despite the need for meniscal conservation, partial meniscectomy is still very relevant in our environment.

Keywords: Injury, management, meniscal, meniscectomy, repair

Introduction

Meniscal injuries frequently occur following sports activities such as football, basketball, etc., in which there are frequent pivoting and twisting movements of the knee. In Nigeria, studies documenting such injuries and its treatment are rare and almost non-existent. This is even though Nigeria is acknowledged to be a sports-loving nation with particular reference to football. Thus, the limited nature of such studies may not necessarily point to the deduction that such injuries are rare in our environment, but may rather speak to the health-seeking behaviour of people in our environment. In other climes, studies documenting meniscal injuries and its management abound. An epidemiological survey of meniscal injuries among high school athletes in the Unites states recorded 1082 injuries in 21,088,365

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exposures, giving an overall injury rate of 5.1 per 100,000 athlete exposures.[1]

The treatment for a meniscal injury depends on some factors. These factors include the patient's age, the pattern of meniscal tear, injury duration, or the time of presentation of the patient following the tear, and the location of the damage on the meniscus among other factors. Meniscal conservation is considered the ideal target of treatment for meniscal injuries. However, physical therapy and partial meniscectomies are also acknowledged to have a place in the treatment of these injuries.

In our environment, which is a referral orthopaedic health facility in Southeast Nigeria, we set out to evaluate the presentation and management of meniscal injuries. The study was a retrospective study over 1 year. The information analysed included age, sex, aetiology, presenting complaint, duration before the presentation, intraoperative arthroscopic findings, the treatment offered and the difference in the patient's Tegner Lysholm knee score evaluated pre-operatively and at 6 months post-treatment.

Patients and Methods

The study was a retrospective, descriptive study of 16 patients who had surgery for meniscal injury over a 1-year period. All consecutive qualified patients who had surgery for meniscal injuries from December 1, 2018 to November 30, 2019, were included in this study. All patients had a traumatic episode as the aetiology for their presenting complaint. All patients with atraumatic tears were excluded from the study. Patients who were treated by physical therapy or who declined surgery were excluded. Patients who were older than 55 years were also excluded, as were patients who had radiographic evidence of moderate-to-severe osteoarthritis.

All patients who qualified for meniscal repair based on tear duration and clinical evaluation at presentation were offered that, while patients who did not qualify for repair were sent for physical therapy. Patients who failed physical therapy and had persistent complaints, including pain and mechanical complaints were selected for arthroscopic evaluation and treatment. Physical therapy consisted of 12 weeks of supervised exercises for muscle strength, endurance, balance and proprioception. Criteria for meniscal repair included the tear pattern, tear duration, presence of arthritic changes and stability of the knee. Patients who had an associated torn anterior cruciate ligament (ACL) were offered arthroscopic ACL reconstruction with meniscal repair. One surgeon did a clinical assessment of the patients with X-rays and magnetic resonance imaging, as well as the surgical procedures. Arthroscopic findings were also documented. All surgeries were performed arthroscopically.

Data collected included age, sex, aetiology, presenting complaint, duration before the presentation, intra-operative arthroscopic findings, the treatment offered and the difference in the patient's Tegner Lysholm knee score evaluated pre-operatively and at 6 months post-treatment.

Results

Males accounted for 14 (88%) cases of the study population in this study, and the mean age of the subjects was 33.6 years with a range of 20–55 years. The most prevalent complaint was knee pain, and the right knee was the most frequently involved side. Sports injury following football was the most common cause. Majority of the patients (75%) presented late. The mean duration of injury was 17.4 months with a range of half a month to 72 months. All recruited patients had a pre-operative Tegner Lysholm assessment and grading.

Most of the tears were complex and not amenable to a repair on arthroscopy. Partial meniscectomy was done in 87.5% of the cases, and meniscal repair was done in the remainder of the subjects. Where the ACL was ruptured in conjunction with a torn meniscus, ACL reconstruction and meniscal repairs were done. There was only one patient with a torn ACL and meniscal injuries in this period. Patients who had isolated meniscal repairs or ACL reconstruction with meniscal repair had protected weight-bearing for 6 weeks. Patients who had partial meniscectomies had 3 days of compressive bandaging and weight-bearing as tolerated. The subjects commenced structured physical therapy afterwards. All patients had a repeat of the Tegner Lysholm assessment at 6 months post-operatively.

The post-operative knee score improved significantly at 6 months follow-up. The pre-operative Tegner Lysholm scores were 45% fair, while the rest scored poorly. Repeat assessment at 6 months post-operative, all patients revealed that 50% were graded excellent, 12.5% were graded good while the remainder were graded fair.

Discussion

Meniscal injuries are common injuries which occur in the knee, primarily where a background of sporting activities exist. Epidemiological studies documenting the incidence of meniscal injuries in developed countries like the United States of America are commonplace.[1,2] Such studies document a frequency of 61 cases per 100,000 persons and a prevalence of 12%–14%.[2] The peak incidence of acute meniscal injury in men is from 21 to 40 years of age and women from 11 to 19 years of age with a male: female ratio from 2.5:1 to 4:1.[2] Similar epidemiologic data are lacking in Nigeria. There are very few studies on meniscal injury in Nigeria. Babalola *et al*.[3] conducted a study at the National Orthopaedic Hospital, Lagos, Southwestern Nigeria. The study, which was on outside in meniscal repairs, documents five surgeries done over 2 years. This is even though the authors saw 28 patients with 30 meniscal injuries over that same period. Nkanta *et al*.,[4] working in Kano, Northern Nigeria, published a study of 18 patients with meniscal tears in an ACL deficient knee. There are also studies by Osholowu *et al*.,[5] in Lagos, Nigeria, documenting 2 case reports.

Indications for meniscal repair have been well elucidated over the years, and these indications include the duration of the injury before treatment. It is well established that early meniscal repair offers the best chance of healing in a torn meniscus. Several workers have documented a relationship between cell count and morphology in the menisci which remains consistent for up to 12 weeks post-injury, after which progressive deterioration starts. They recommended that meniscal repair should be done before 12 weeks based on these findings.[6] Studies in Nigeria all cite delayed presentation of their patients. Babalola *et al*.,[3] showed that the meantime to the presentation of patients for meniscal repair was 10 months. In Kano, the mean duration of injury was 14.4 ±11.3 months with most patients presenting between 7 and 12 months.[4] In this study, the mean duration of injury is similar to reports from other parts of Nigeria, although the range was as high as 72 months after the injury. The finding of delayed presentation in this study means that patients in our own environment present beyond the recommended time for optimal meniscal repair. It is likely that at the time of presentation, the initial tear pattern would have progressed to complex patterns which preclude a successful attempt at repair.

Although increased age at the time of injury has been thought to affect tear patterns due to age-related weakening of the meniscus producing a higher propensity for complex degenerative tears, patients age has not been conclusively shown to affect healing.[7] Studies have also buttressed this finding by showing that meniscal repair in patients older than 40 years has the same failure rates as meniscal repairs in those younger than 40 years.[8] In this study, majority of the patients (87.5%) presented at <40 years of age. The patients who presented above 40 years of age in this study had complex tears of the lateral meniscus and had arthroscopic partial meniscectomies performed.

The universally accepted principle in the management of meniscal injuries currently is meniscal conservation. The reason is that the meniscus is a critical structure in the biomechanics and function of the knee joint. A meniscal repair best serves meniscal preservation; however, these repairs require certain conditions to be successful. Some studies have shown that non-operative treatment gives the same outcome as arthroscopic meniscal debridement as a first-line treatment strategy. It has also been shown that where meniscal conservation via a repair is not possible, and patients have failed conservative treatment, judicious partial meniscectomies remain a viable option for these patients.[9] All the patients in this study had failed non-operative therapy and required surgical treatment for persistent knee pain. Performance of arthroscopic partial meniscectomy in these patients provided short term pain relief, at 6 months post-surgery and an improvement in their functional scores.

Conclusion

Reports on meniscal injuries are uncommon in Nigeria, and patients with traumatic meniscal injuries frequently present late when they do present. Meniscal repair and conservation is usually not a viable option at the point of the presentation. Partial meniscectomies offer relief for patients who have failed physical therapy and have persistent pain.

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Conflicts of interest

There are no conflicts of interest.

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