

Meniscal Allografts - Indications in patients with grade IV articular cartilage changes

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Introduction

The function of the meniscus has been well documented in recent years, mainly following long-term follow-up of patients who had total meniscectomies in the past. The consequences of meniscectomy in these patients include osteoarthritic change due mainly to high contact stresses developed in the absence of the meniscus.

A number of recent studies have shown gratifying short-term results of meniscal allografts. The objective of meniscal allograft transplantation is relief of pain and improvement of function. By restoring joint mechanics it should also prevent long-term arthritic degeneration. While relief of pain is achieved in most cases, its effect on prevention of degenerative joint disease has not been shown. The procedure is generally recommended for patients with little or no joint surface damage

We report on the short-term results of meniscal allografts performed for a small cohort of patients most of whom had significant long standing joint surface damage.

Material & Methods

In the period from May 1996 to June 2000, 12 meniscal transplants in 10 patients performed at the Droitwich Knee Clinic, were monitored prospectively. Age ranged from 19 to 53 years (mean 33.3). There were two females and eight males. There were six medial and six lateral menisci. Mean follow-up period was 24.6 months (range 6 to 53 months). Most were secondary or tertiary referrals, with a mean of 3.6 previous procedures (range 2 – 9), and a mean time from onset of symptoms of 9.3 years (2.5 – 14 y). Seven of the ten patients had articular surface changes (grade II – IV).

Each patient filled out a detailed preoperative questionnaire, from which a pre-operative Lysholm score and Tegner activity rating was derived. Postoperatively, patients were asked to fill out a follow-up questionnaire at six months, 1 year and yearly thereafter. The forms included detailed questions on symptoms including the Borg scale for pain (0 – 10), the presence of mechanical symptoms such as locking or giving way. Postoperative Lysholm and Tegner scores were recorded as well as the IKDC system. A thorough clinical examination was performed at each time point particularly recording the presence and size of any effusion, joint line tenderness and range of motion. Isokinetic testing was used to monitor improvement in muscle function prior to return to sporting activity.

Second look arthroscopy was performed routinely at three months for all patients. Pre and postoperative X-rays and MRI scans were analysed.

Results:

Pain was the main pre-operative symptom in all cases with a mean value of 5.3 on the Borg scale (range 3 to 8). Seven patients had recurrent or persistent effusion and 5 cases had mechanical symptoms such as locking or giving way.

The mean pre-injury Tegner rating was 8 (range 3 – 9). Mean pre-operative scores were 2 (0 – 5). At a mean follow up of 24 months, the mean Tegner rating had improved to 3.2 (0 – 4). Three patients had no improvement on preoperative activity. Another two were worse and the rest had improved (overall mean improvement of 1.3 Tegner grades).

Lysholm scores improved from a preoperative mean of 63.3 (range 29 – 95) to 76.4 (48 – 99) postoperatively.

Of the 9 patients who filled out their subjective IKDC questionnaire, 5 (56%) rated their knee as nearly normal. 3 as abnormal and 1 remained severely abnormal.

Improvement in pain however was disappointing with a mean preoperative Borg score of 4.6, which improved to 3.5 postoperatively.

Discussion:

Contrary to recommendations in the literature this study includes patients who have been referred with long standing problems, including multiple operative procedures in the past and grade IV changes affecting the weight-bearing surfaces in many cases. Although those who had grade IV changes did not fare very well, there was an overall improvement in pain and function and activity. The two patients with the highest postoperative Lysholm scores (96 & 99 respectively) had had no joint surface damage preoperatively and no pain postoperatively (0 on the Borg scale). However, return to pre-injury level of activity is by no means the rule. Only one patient was able to return to the same level of sporting activity. In general, however, all but one patient reported some degree of improvement.

Conclusion:

It is difficult to draw firm conclusions from this small cohort with short-term follow-up. However, it appears that although it is possible to achieve some improvement in patients with severe articular surface damage, the results are far better if the patient is referred early enough prior to the onset of severe degenerative joint disease. This begs the question whether this procedure should perhaps be recommended for patients who have had meniscectomies and have little or no symptoms.