Arthroscopic meniscal repair with fibrin clot of complete radial tears of the lateral meniscus in the avascular zone.

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Peripheral lateral meniscal tears are amenable to arthroscopic meniscal repair. However, the posterolateral aspect of the lateral meniscus adjacent to the popliteus tendon is devoid of penetrating peripheral vessels and therefore difficult to heal. A complete radial split at this site is usually treated with total meniscectomy. We report five cases of a tear of the posterolateral aspect of the lateral meniscus anterior to the popliteus fossa. All patients had a radial split that extended to the popliteus tendon. In all cases, the repair was enhanced with a fibrin clot. Second-look arthroscopy showed that healing of the periphery occurred in all of the cases. All patients returned to their initial level of sports activity. Three of five patients were available for follow-up at an average of 71 months, and magnetic resonance imaging was performed at that time to assess the previously repaired meniscus. All menisci were fully healed and showed no further signs of degeneration. The ability of an exogenous fibrin clot to stimulate and support a reparative response in the avascular portion of the meniscus may represent a potential method of repair. Awareness of the relatively low healing potential of this zone and enhancement of healing opportunities should improve outcome.

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Meniscal repair enhancement techniques.

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Although other methods of meniscus repair enhancement are being investigated (e.g., growth factors, synthetic matrices, stem cells), the results are too preliminary to warrant speculation about their potential for clinical use. Repair of the white-white meniscal tear remains an enigma. Although repair enhancement techniques, such as fibrin clot and synovial abrasion, have been shown to improve the healing rates in certain red-white meniscal lesions, their use in the repair of white-white tears has been limited and must be considered investigational.

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Arthroscopic meniscal repair with fibrin glue.

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Since 1984 we have arthroscopically repaired 40 meniscal tears in 32 patients using fibrin glue in our operative technique. This technique was reported initially in 1985 (Ishimura M, Samma M, Habata T, Fujisawa Y. The use of fibrin glue for fresh knee injury. Cent Jpn Orthop Traumat 1985; 28:1404-8), with a more detailed study published in 1987 (Ishimura M, Samma M, Fujisawa Y, et al. Arthroscopic repair of the meniscus tears with fibrin glue. Arthroscopy (Jpn) 1987;12:31-6). During the follow-up period, which ranged from 10 months to 6 years and 7 months (mean: 3 years and 8 months), only two patients complained of meniscal symptoms and underwent arthroscopic partial meniscectomy. Twenty patients with 25 repairs underwent repeat arthroscopy at an average of 5.7 months (range: 2 months-1 year and 2 months) after the initial repair. Twenty repairs were rated as good, four as fair, and one as poor by arthroscopic evaluation criteria. At present, the most appropriate use of this arthroscopic meniscal gluing technique is in tears in the posterior segment, which are difficult to suture without arthrotomy. Even a long tear with a stable reduced position can be expected to show good healing. When reduction of the tear is not stable, additional sutures should be used.

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