Laser Assisted Arthroscopic Surgery for Bilateral Psoriatic Arthropathy of Knee in a Middle Age Housewife

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Abstract

Joint involvement is common in patients with Psoriasis. Although the mainstay of treatment is drug therapy, we may be required to intervene surgically in patients with florid, painful synovitis. This is done to obtain pain relief and functional improvement, as also to prevent destruction of articular cartilage by the synovial invasion. This philosophy is similar to what we use in Rheumatoid Arthritis.

Obviously now, Arthroscopic surgery is the method of choice and we do not even discuss the possibility of an open debridement of the joint, as was done in the past. However, in Rheumatoid as well as in Psoriatic arthritis, the major problem is the extreme vascularity of the diseased tissue, leading to reactionary post-operative haemorrhage when we use conventional operating tools. This can compromise the rehabilitation process to a large extent.

With the advent of LASER, this issue is taken care of. We can now hope for rapid return to function, provided we intervene early, provided the articular cartilage is largely intact and if we can ensure excellent control of disease with drug therapy.

We present a typical case of bilateral knee involvement in Psoriasis in a middle-aged housewife to clearly illustrate the benefit of using modern surgical modalities.

Introduction

Joint diseases are common in patients with Psoriasis, with a prevalence rate of more than 30% [1]. Moreover, the arthritis is not correlated with the extent of skin disease [2]. Although the mainstay of treatment is drug therapy, patients may need surgery to alleviate pain and to restore function [2].

Use of LASER as an Arthroscopic operating tool is the current state of art in Synovectomy techniques and is more efficient than any previous modality [5]. In fact, good remission rates are observed in Rheumatoid Arthritis and Psoriasis with a combination of Synovectomy, Chondral debridement and meniscal clearance [6]. This view is further reinforced by the work of Takagi et al [3]. In fact the technical details of intra-articular LASER usage, the safety issues as well as the clinical applications have been clearly outlined now [4].

We have been using the Holmium: YAG LASER in Arthroscopic surgery for past ten years or so in the treatment of various chronic affections of joints as well as in trauma. We present a typical illustrative case of a Psoriatic Arthropathy managed by us with LASER assisted Arthroscopic surgery.

Case History

Mrs. S., a 45 year old housewife with Psoriatic skin lesions mainly all over the lower limbs, presented with severe synovitis of both Knee joints. The range of movements was 10 to 60 degrees in both knees, very painful. CRP levels were raised (7.5 mg %), as was the ESR (30 mm at the end of one hour). X-rays showed mildly increased joint space.

As the patient was recovering for the skin lesions with Ayurvedic therapy, we waited for about two weeks. During this period, patient took Ayurvedic drugs, along with ice compresses and light exercises.

After about two weeks, we undertook a Diagnostic Arthroscopy with LASER assisted Arthroscopic debridement of both Knee joints, at an interval of ten days.

We noted widespread synovitis with a blood-red appearance even under a tourniquet applied over an exsanguinated limb (Figure 1). Synovial pannus was noted over both menisci and over the femoral condyles, so also in the medial and lateral condylar gutters. In the right knee, we noted two Grade 3 Chondral lesions over the Medial femoral condyle.

We performed a LASER assisted debridement of both knees, which comprised of Synovectomy and pannus excision, Chondroplasty and Microfracture for the Grade 3 lesions, and a free-beam synovial shrinkage.
We used the 2100 nm wavelength Holmium: YAG LASER generator with a typical energy delivery system of a 350 micron fiber, inside 1.8 mm diameter needle-probes, with 15 and 30 degree bent tips attached to ebonite handles with fiber locks. The energy used was 20-26 watts with a frequency of 12 Hertz. For most of the surgery except tissue shrinkage, we used a contact beam mode. For Microfracture the energy usage was 30 watts with frequency of 16 Hertz.

The patient went on to have a typical recovery as after LASER usage, with very minimal reactive synovitis and no haemorrhage. After about 3 months of active mobilization exercises and without use of CPM machine or any other mechanical aids, patient achieved full range of painless movements in both Knees. This has been maintained for past 6 years with regular exercises and excellent disease control by our Ayurvedic colleagues.

Discussion

We obviously must intervene early on in the course of the joint disease in Psoriasis. As shown clearly by Fiocco et al [6], timely Arthroscopic surgery for Psoriatic knees gave very good functional outcomes, with a 86% rate of remission of the disease at 36 months.

We believe that Ayurvedic therapy can shorten this period and await a long term study being carried out by our Ayurvedic colleagues. This can pave the way for a multiple-pathy co-operation or convergence of therapies, which may be the best scenario for our patients.

Usage of Holmium: YAG LASER in Arthroscopy may be a paradigm shift in the armamentarium at our hands. Clearly, in chronic inflammations with propensity of reactionary haemorrhage, use of suction-shavers may be dicey, but LASER can be a boon. Reaching all crevices of joints, doing a 'bloodless' Microfracture, excellent haemostatic effect, virtual absence of post-operative synovitis may all be decisive advantages over the 'older' operating tools.

Conclusion

Timely surgical intervention can give remission of joint disease in Psoriasis.

Use of LASER as Arthroscopic surgery operating tool has many advantages over the suction-shaver.

Co-operation between pathies may well be the best scenario for drug control of the disease process in Psoriasis.

References

Illustrations

Illustration 1

Figure 1

Illustration 2

Figure 2