



Service Priorities and Programmes
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Feasibility of wide awake upper limb surgery under local anaesthesia: an experience in wrist arthroscopy, tendon transfer and cubital tunnel decompression surgeries in two centers

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Introduction

Upper limb surgeries were conventionally performed under general or regional anaesthesia. Although standard practice, they are associated with certain anaesthetic risks. To improve safety and efficacy, we have been using local anaesthesia in wrist arthroscopy since 1998 by means of portal site local anaesthesia (PSLA), and extended its application into nerve decompression and tendon transfer surgeries systematically since 2015. This technique, termed wide-awake local anaesthesia with no tourniquet (WALANT), is coupled with an ambulatory surgery service in both PWH and AHNH enabling patients to be discharged on the same day.

Objectives

We report the spectrum of our hand surgery service that was delivered by this ambulatory model, and the feasibility and safety of WALANT in 3 representative and distinct aspects of hand surgery: wrist arthroscopy, tendon transfers, and cubital tunnel decompression with medial epicondylectomy.

Methodology

From January 2014 to March 2016, 709 out of 851 (83%) hand surgeries were performed under local anaesthesia as day surgery in AHNH, our main day surgery center. Among the most commonly performed procedures, there were 151 cases of carpal tunnel release, 91 hand and wrist arthroscopy, 58 trigger digit release, 58 implant removal, 36 fracture fixation, and 28 tendon surgery. These range from minor to ultramajor in magnitude.

We studied safety and feasibility in 3 groups of patients. We retrospectively reviewed

111 consecutive cases of arthroscopy (Group A) and 23 consecutive cases of tendon transfer surgeries (Group B). We also conducted a prospective study in 16 patients who received ulnar nerve decompression and medial epicondylectomy (Group C). All surgeries were performed under WALANT.

In group A, arthroscopic procedures included 82 debridements, 30 ganglionectomies, 11 TFCC debridements, 6 synovectomies, 4 wafer procedures, 4 synovial biopsies, 3 TFCC repairs, 2 radial styloidectomies, and 2 thermal shrinkages. Patients were phone-interviewed on the effectiveness of anaesthesia according to a questionnaire. In group B, tendon transfer procedures involved included 12 FDS opponenplasties and 15 tendon transfers to extensor tendon(s). 2 operations involved multiple tendon transfers. Patients were phone-interviewed on the effectiveness of anaesthesia according to a questionnaire.

In group C, 16 patients with various severity grades of cubital tunnel syndrome were recruited. They received ulnar nerve decompression and medial epicondylectomy and were assessed preoperatively, intraoperatively and postoperatively, by hand surgeon and occupational therapist on effectiveness of anaesthesia and subjective and functional outcomes.

Result

In all groups, none of the procedures required sedation. There were no complications related to the anaesthetic or the surgery. None of the patients reported intolerable pain. In group A, 6 of 111 cases of arthroscopies were converted to forearm intravenous regional anesthesia after diagnostic wrist arthroscopy owing to conversion to open surgery. None of the conversions were due to patient's intolerance of local anaesthesia. Of note, bone surgeries (radial styloidectomy, wafer procedure, medial epicondylectomy) in group A and C were well tolerated under local anaesthesia. The VAS during epicondylectomy was 12 compared with 32 during anaesthetic injection.

Wide awake surgery under local anaesthesia provides a reliable anaesthetic effect while obviating the risk of general anaesthesia; removes the risks from using a tourniquet; allows patient-doctor interaction to enhance patient understanding and rehabilitation; and allows patient's voluntary motor control for assessment. In the setting of an ambulatory surgery service, it increases service throughput and contains cost.