

# Clinical audit of readmission following upper limb surgery using regional anaesthesia

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## Background

- Regional anaesthesia has been used for many years in upper limb surgery. The first local anaesthetic for the purpose of surgery was utilised in 1884 in the form of cocaine injections into the eye by the Austrian Karl Koller, under the influence of his good friend Sigmund Freud (1), (2).
- The current choice of drug for regional anaesthesia has progressed to the use of Bupivacaine, Lidocaine and Ropivacaine amongst other due to their better side effect profile, with selection based on their variable speed of onset and duration of analgesia required (3).
- The implementation of regional anaesthesia has extended the scope for surgical intervention. The benefits of regional anaesthesia over general anaesthesia are widely recognised (reference). These include:
  - Allowing surgery to be considered in those who are suffering with multiple co-morbidities that would cause general anaesthetic to be a risky option.
  - Shortening hospital stay- regional anaesthesia is relatively short acting and allows rapid delivery and reversal. This facilitates the nature of high turnover lists and day case surgery(4).
  - reduction in post operative complications- reducing hospital stay is widely known to reduce hospital acquired infection rates, reduce long term morbidity and mortality.(5),(6) With any surgery there are always risk of complications which can lead to re-admission. Some of the causes of unplanned readmission following all RA procedures include pain, bleeding and infection. Readmissions are distressing for patients and are a burden upon the NHS- reportedly costing £ 1.6 Bn a year (7).
- Readmission rates are therefore commonly used as an outcome measure of quality of service and effectiveness of an intervention.
- However, there have not been many studies designed to look specifically at the readmission rates for cases where RA was used in upper limb surgery.

## Aims, Objectives and Standards

We took this opportunity to explore the gap in the research with the following aims:

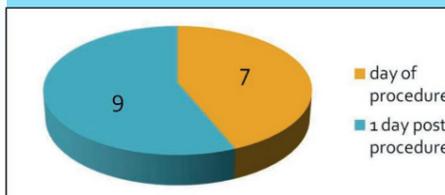
- To determine the frequency and causes of readmission after day case upper limb surgery under RA
- To reduce readmission following upper limb surgery using RA by establishing new processes and defining new standards

## Methodology

- We conducted a retrospective audit of patients that were readmitted to A+E following upper limb surgery using RA prior to their initial follow up review date. We looked at the admissions between 1st October 2011 and 1st October 2012, which we identified using Bluespiers and QlikView software. 16 patients out of 336 who had undergone upper limb surgery within that time period were identified. A case note review was performed for each of these patients.
- Data was analysed using Microsoft Excel software.

## Results

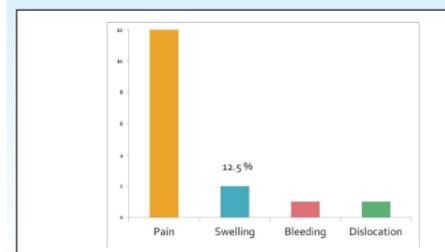
- All 16 patient identified were readmitted within 48 hours of surgery. This translated to a 4.8% rate of readmission. These patients were noted to be predominantly male over 50.



**Figure 2**  
Number of patients readmitted following upper limb surgery between 1/10/11 and 1/10/12

The presenting complaints for readmission were as follows:

- Pain was the commonest cause for readmission, contributing to 12 of the 16 readmissions. Of these patients, only 25% were prescribed analgesia on discharge from the hospital - 4 out of 12.
- Of the 2 patients readmitted with upper limb swelling, only 1 was advised to elevate their arm prior to discharge.
- The remaining 2 were admitted with dislocation of joint caused by avoidable activity which they had been advised against, and post operative bleeding which required intervention.



**Figure 3**  
Causes of re-admission identified following upper limb surgery using RA

## Conclusions

- The readmission rates following use of RA lie between 1-5 % nationally. No evidence based rates for upper limb surgery were available for comparison (8), (9), (10), (11).
- We identified pain and swelling as preventable causes, which implies that there is scope for improvement in our rates of readmission. We will implement a new standard of care whereby every patient is provided adequate analgesia and information prior to discharge. We will also advise appropriately regarding elevation of the limb, usually for 24-48 hours post operatively as a minimum.
- It is important patients are informed about the nature of regional anaesthesia. It is a common mistake they make in believing that immediate post operative pain relief will remain in place, when in fact it is the first 24-48 hours that the regional blocks provided can provide a background of analgesia. In this time period the patient should be getting on top of their pain according to the pain ladder, using regular ample oral analgesics.

We have used the results and conclusions from this audit to design 'Pain packs' which are now being given to patients before discharge:



Before you leave...

Have you received your painkillers and instructions?

Do you have a sling?

If you have any worries in the next 48h please contact ...

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