Injection versus surgery in the treatment of trigger finger

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Record Status
This is a critical abstract of an economic evaluation that meets the criteria for inclusion on NHS EED. Each abstract contains a brief summary of the methods, the results and conclusions followed by a detailed critical assessment on the reliability of the study and the conclusions drawn.

Health technology
Steroid injection versus surgery in the treatment of trigger finger. Steroid injection involved office administration of 2cc of 6mg/mL betamethasone sodium phosphate acetate (celestone).

Type of intervention
Treatment.

Economic study type
Cost-effectiveness analysis.

Study population
Male and female patients who were treated for trigger finger.

Setting
Hospital. The economic study was carried out in Chicago, USA.

Dates to which data relate
The main effectiveness data were taken from a single study conducted in 1995. Resource and cost data were mainly derived from 1989-95 sources. The price year was not stated.

Source of effectiveness data
The estimate of average duration of relief for patients requiring more than 1 injection and the success rate for patients treated with a single injection, subsequent injection and surgery were derived from a single study.

Link between effectiveness and cost data
The costing was undertaken retrospectively on the same patient sample as that used in the effectiveness study.

Study sample
A cohort of 102 patients was included in the analysis. Power calculations to determine the sample size were not undertaken. 22% presented with associated medical conditions including insulin-dependent diabetes, inflammatory arthritis or gout. The average age was 61 years (range 33-96). The thumb accounted for 32% of trigger fingers.

Study design
Case-study. The duration of follow-up ranged between 6 and 18 months depending on treatment modality. No loss to follow-up was reported.
**Analysis of effectiveness**
The analysis of the clinical study was based on treatment completers only. The primary health outcomes used in the analysis were the number of patients who underwent surgical release of the A1 pulley and who were treated with local steroid injection, the average duration of symptom relief for patients requiring more than 1 injection, injection and operative discomfort and the success rate for patients treated with a single injection.

**Effectiveness results**
Thirty-four digits underwent surgical release of the A1 pulley. Seventy-five digits were treated with local steroid injection only. The average duration of relief from injection for those patients requiring more than 1 injection was 14 weeks. Twenty-six patients who completed questionnaires noted that the discomfort of injection was more severe than the administration of subcutaneous local anaesthesia required to perform surgery. Eight patients who completed questionnaires noted that injection and operative discomfort were equivalent. The success rate for treatment with a single injection was 60%. P values were omitted.

**Clinical conclusions**
Surgical management was shown to be the best option in patients with trigger finger who continue to be symptomatic after a single injection.

**Measure of benefits used in the economic analysis**
The authors did not use a single benefit measure and as such the benefits are assumed to be equal to the effectiveness measures. A patient questionnaire was used to determine discomfort, inconvenience, the duration of relief and overall satisfaction.

**Direct costs**
New patient examination, tendon sheath injection, hand radiographs, subsequent injection, surgical release of A1 pulley costs and centre charges were included in the analysis. Quantities were analysed separately from prices. The quantity/cost boundary adopted was that of the hospital. Discounting was not applied even though the follow-up period ranged between 6 and 18 months. The price year was not stated.

**Statistical analysis of costs**
Not undertaken.

**Currency**
US dollars ($).

**Sensitivity analysis**
No sensitivity analysis was conducted.

**Estimated benefits used in the economic analysis**
Thirty-four digits underwent surgical release of the A1 pulley. Seventy-five digits were treated with local steroid injection only. The average duration of relief from injection for those patients requiring more than 1 injection was 14 weeks. Twenty-six patients who completed questionnaires noted that the discomfort of injection was more severe than the administration of subcutaneous local anaesthesia required to perform surgery. Eight patients who completed questionnaires noted that injection and operative discomfort were equivalent. The success rate for treatment with a single injection was 60%.
Cost results
New patient examination, tendon sheath injection and hand radiograph costs for the first office visit and one injection were $56.50, $41.39 and $26.59, respectively (total costs=$124.48). Each subsequent injection cost $65.23. Surgical release of A1 pulley costs and centre charges for treatment with surgery after one injection were $268.42 and $51.04 (total costs = $319.46). Discounting was not applied even though the follow-up period ranged between 6 and 18 months.

Synthesis of costs and benefits
A synthesis of the estimated benefits and costs was not provided. No incremental analysis was performed.

Authors' conclusions
Surgical management was shown to be a cost-effective option in patients with trigger finger who continue to be symptomatic after a single injection.

CRD COMMENTARY - Selection of comparators
The reason for the choice of comparator is clear. The steroid injection is widely used as treatment because of its simplicity, applicability in an office setting and low cost. You, as a user of this database, should consider whether these are widely used health technology in your own setting.

Validity of estimate of measure of benefit
The estimate of measure of benefit used in the economic analysis is likely to be internally valid. The data do not appear to have been used selectively.

Validity of estimate of costs
Resource quantities were reported separately from the prices. Adequate details of the methods of quantity and cost estimation were given. Important cost items do not appear to have been omitted although the authors noted that their costs are low compared with other settings and therefore should be treated with some caution.

Other issues
The authors’ conclusions are likely to be justified given the uncertainties in the data. Appropriate comparisons were made with other studies, particularly in relation to co-morbidity (insulin-related diabetes, for example). Results were not presented selectively. A synthesis of the estimated benefits and costs, however, could have been provided as a summary cost-effectiveness measure.

Implications of the study
Research into the impact of modification of both the injection and surgical technique is required to improve its cost-effectiveness and wider use.

Bibliographic details

Indexing Status
Subject indexing assigned by NLM

MeSH
Adult; Aged; Aged, 80 and over; Anti-Inflammatory Agents /administration & dosage /economics /therapeutic use; Betamethasone /administration & dosage /economics /therapeutic use; Choice Behavior; Comparative Study; Costs and