Management of flexor tendon sheath ganglions: a cost analysis

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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
Aspiration was compared with operative excision for the treatment of flexor tendon sheath ganglions.

Type of intervention
Treatment.

Economic study type
Cost-effectiveness analysis.

Study population
The study population comprised patients with an ICD-9 (International Classification of Diseases, Ninth Revision, Clinical Manifestation) diagnosis of flexor tendon sheath ganglion. To be included in the study, the patients had to participate in the telephone interview and not have undergone incidental surgical excision of the ganglion. Patients were excluded if there was erroneous flexor tendon sheath ganglion coding, an incorrect telephone number on record, or if the patient had undergone incidental excision.

Setting
The setting of the study was secondary care. The economic study was carried out in the USA.

Dates to which data relate
The effectiveness data were collected between 1998 and 1999. The cost data related to the 2001 Medicare reimbursement fees.

Source of effectiveness data
The effectiveness data were derived from a single study.

Link between effectiveness and cost data
The costing was not undertaken on the same patient sample as that used in the effectiveness study. Treatment algorithms were devised for the patient sample, and the costing was undertaken on each distinct treatment algorithm. The costing was undertaken retrospectively, after the effectiveness results were known.

Study sample
The sample size was not determined in the planning phase of the study. The sample was selected by reviewing the charts of all patients from 1998 to 1999 with an ICD-9 diagnosis of flexor tendon sheath ganglion. A total of 259 patients were identified as having the correct ICD code. Of these, 84 (32%) patients were excluded because of erroneous flexor tendon sheath ganglion coding, incorrect telephone numbers on record, or they had undergone incidental excision. This
left 175 patients in the study.

**Study design**
This was a retrospective cohort study that was carried out in a single centre. The timeframe was one year.

**Analysis of effectiveness**
The basis of the analysis was treatment completers only. The primary health outcomes used in the study were recurrence of ganglions and cured after one or more aspirations. Twenty patients refused both treatments, and 14 patients had surgery without prior treatment. A total of 141 patients underwent aspiration.

**Effectiveness results**
Of the 14 patients who had surgery without prior treatment, 93% had no recurrence.

There were 141 patients who had aspiration. After one aspiration, 58% (82 patients) had no recurrence and 15 patients were lost to follow-up. The remaining 44 patients failed initial aspiration and received a level two to four established patient examination.

Twenty of the 44 patients who failed initial aspiration had a second aspiration, with 55% (11 patients) having no recurrence. Of the remainder (9 patients), 4 patients were lost to follow-up and 5 patients had surgery (all five were cured). The other 24 patients had excision and were all cured.

Therefore, after two consecutive aspirations, 66% (93 patients) were free of flexor tendon sheath ganglions. The cure rate after two aspirations was statistically different, (p>0.05), when compared with surgery without prior treatment. The cure rate after one or two aspirations was not statistically significant.

**Clinical conclusions**
The clinical conclusion was that a nonsurgical approach to treating flexor tendon sheath ganglions was effective.

**Measure of benefits used in the economic analysis**
The authors did not derive a summary measure of benefit. In effect, a cost-consequences analysis was performed.

**Direct costs**
The direct costs incurred by Medicare were included in the study. The 2001 Medicare reimbursement fees were obtained using the Medicare-assigned relative value units (RVU), with a conversion rate of $38.26/RVU. The direct costs for patient office visits, consultations, and aspiration and surgical excision, were included. The costs were calculated for each part of the treatment algorithms to calculate an average cost per patient. Discounting was irrelevant and was not performed.

**Statistical analysis of costs**
No statistical analysis of the costs was undertaken.

**Indirect Costs**
No indirect costs were included in the analysis.

**Currency**
US dollars ($).
Sensitivity analysis
No sensitivity analysis was undertaken.

Estimated benefits used in the economic analysis
See the 'Effectiveness Results' section.

Cost results
The weighted average cost of surgery without prior treatment was $1,842.51 per patient.

The cost of successful treatment with one aspiration was $151.63 per patient.

For those cured after repeat aspiration, the weighted average cost per patient was $288.97.

The cost for those who had one failed aspiration and surgical excision was $1,979.85 per patient.

The total cost for those who required excision after two failed aspirations was $2,025.12 per patient.

The cost of successfully treating 93 patients (82 were cured after one aspiration and 11 were successfully treated after two aspirations) was $15,612.33.

The calculated cost for this curative algorithm would be $167.87 per patient.

The total cost of treating 93 patients with two consecutive aspirations plus 5 patients who had excision after repeat aspiration was $25,987.93. The cost of curing 93 patients was $265.18 per patient.

The total cost of treating 82 patients cured after one aspiration plus 24 patients who failed aspiration and received surgery was $59,950.06. The cost of curing 106 patients was $565.67 per patient.

Synthesis of costs and benefits
The costs and benefits were not combined.

Authors' conclusions
The nonsurgical approach to flexor tendon sheath ganglions was effective. The authors suggested that two aspirations should be performed before a surgical excision is considered.

CRD COMMENTARY - Selection of comparators
A justification was given for the comparator used. Surgical excision represents current practice and is generally considered the most effective treatment for flexor tendon sheath ganglions. You should decide if this is a widely used health technology in your own setting.

Validity of estimate of measure of effectiveness
The analysis was based on a retrospective cohort study, which was appropriate for the study design. The study sample was representative of the study population. No details of the patient characteristics were given and no statistical analysis was undertaken.

Validity of estimate of measure of benefit
The authors did not derive a summary measure of health benefit. The analysis was, in effect, a cost-consequences study.
Validity of estimate of costs
All the categories of cost relevant to the perspective adopted were included in the analysis. The costs and the quantities were not reported separately. No statistical analyses of the quantities and prices were performed.

Other issues
The authors made appropriate comparisons of their findings with those from other studies. The issue of generalisability to other settings was not addressed. The authors did not present their results selectively. The study involved patients who were diagnosed with flexor tendon sheath ganglions and this was reflected in the authors' conclusions. The authors did not identify any limitations of the study.

Implications of the study
The main implication of the study was that two aspirations should be performed before a surgical excision is considered.

Source of funding
None stated.

Bibliographic details

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