The outcome of treatment of trigger thumb in children

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Our aim was to determine the outcome of the treatment of trigger thumb in children. There was a rate of spontaneous recovery of 49% in those children whose thumbs were observed before a final decision to operate was made. Spontaneous recovery occurred more commonly in children over 12 months old. All patients treated by operation had a satisfactory outcome with few complications. The overall rate of recurrence was 4.0% and it was more common in younger children. Our results suggest that a conservative approach to surgery for this condition could be adopted.

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Stenosing tenovaginitis of flexor pollicis longus (trigger thumb) is relatively uncommon in children.¹⁻³ The aetiology remains unknown, but three possible causes have been suggested. First, it may be congenital,⁴⁻⁸ secondly it may result from trauma^{9,10} since it is often misdiagnosed as a fracture of the thumb or dislocation of the interphalangeal joint,^{1,3,11} and thirdly it may be acquired during the early months of childhood.^{12,13}

Treatment is usually surgical.^{4,5,9,13-16} Dinham and Meggitt,¹ however, observed that patients presenting at birth had a rate of spontaneous recovery of 30%. They also found a rate of spontaneous recovery of 12% in those who presented when aged between six and 12 months, but none in those presenting above this age. Mulpruek and Prichasuk¹⁰ recorded a rate of spontaneous recovery of 24%. Both groups therefore advised that there should be a period of observation before surgery.

Our aim was to establish the outcome of treatment of children with trigger thumb attending the Royal Hospital for Sick Children, Glasgow. We sought to determine the

rate of spontaneous recovery and of recurrence, and to identify aetiological factors for this condition.

Patients and Methods

We followed 192 children (227 thumbs) presenting with trigger thumb between 1989 and 1997. After the initial consultation, 53 children (57 thumbs, 27.6%) were observed in the hope that the symptoms would resolve spontaneously. The remaining 139 children (170 thumbs, 72.4%) were offered surgical release (Table I).

Details of the children were retrieved from the departmental database. The clinical details, diagnosis, operation details and complications for each were obtained from the case notes. At the first outpatient consultation the nature of the operation was explained to the parents and the incidence of spontaneous recovery was described according to the information available.¹ The parents indicated which option they wished to accept.

The operation was performed under general anaesthesia with a tourniquet. A transverse incision was made over the nodule in the tendon of flexor pollicis longus. The A1 pulley was divided longitudinally. The tendon of flexor pollicis longus was then delivered into the wound to break down any adhesions. The thumb was assessed for full extension at the interphalangeal joint. The skin was then closed with an absorbable subcuticular suture. The children were allowed to mobilise the thumb freely within the dressings and were reviewed six weeks after surgery when postoperative complications were noted. The children were discharged if no problems were encountered.

All the patients, whether treated surgically or not, were reviewed in the clinic, and clinical or telephone review was undertaken at a minimum of 12 months to determine the outcome and to record recurrence. Rates of recurrence and complications were expressed as a percentage of the number of thumbs operated on.

Results

Table I shows the details of the two groups after subdivision into those treated surgically or conservatively. Although the mean age of both groups was similar, the median ages suggest that the deferred children were young-

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Table I. The details of the 192 children referred for trigger thumb

	Total number of patients	Patients in deferred group		Patients put on waiting list	
		Number	%	Number	%
Gender	192	53	100.0	139	100.0
Boys	93	22	41.5	71	51.1
Girls	99	31	58.5	68	48.9
Side of operation					
Right	68	19	35.8	49	35.2
Left	89	30	56.6	59	42.4
Bilateral	35	4	7.5	31	22.3
Age (mth)					
Median		25		30	
Mean		33.1		34.7	
Range		1 to 156		7 to 108	

er. There was also a higher proportion of children in the operated group with bilateral trigger thumbs.

The outcome in the deferred group of children is shown in Table II. This group was observed for a mean period of seven months (1 to 23). Spontaneous recovery occurred in 49%, and was directly related to age. There was no sign of a residual flexion deformity in any of these children at review, and no child with spontaneous recovery was seen subsequently with a recurrence.

In 27 children in the deferred group the condition did not resolve and required operation. This gave a total of 166 patients who had surgical treatment. The operations were carried out at a median of 46 days (3 to 720) after the decision to operate had been made. The mean age of these children was 36.2 months, and in none had the trigger thumb resolved while waiting for surgery. The outcome is shown in Table III. From the original case-note review only seven patients (3.52%) had a recurrence from the 200 thumbs operated on. Recurrence occurred more frequently in the younger child and the mean time to recurrence after operation was 7.7 months (1 to 20). All other children had

a satisfactory outcome after surgery. Three children (1.5%) had superficial wound infections which responded to antibiotic therapy.

In an attempt to obtain longer follow-up we traced 89 children (46% of the original group) who were treated surgically and reviewed them by telephone. The mean follow-up was 57.6 months (13 to 115). Among those children with a recurrence, no further problems were identified after reoperation. In the remainder there was a single recurrence. There were eight recurrences in all, giving an overall rate of 4.0% after a mean follow-up of 57.6 months (Table III). No further contact was made with children treated conservatively.

Discussion

Trigger thumb in children is relatively uncommon and the aetiology remains unclear. Some believe the condition to be congenital while others consider it to be acquired. In our series there were six children who presented with trigger thumb under the age of six months, of which one was a newborn infant. Five of this group ultimately required surgery. Our hospital is the only secondary and tertiary referral centre for all congenital orthopaedic problems in the area of the Greater Glasgow Health Board. Only the one patient was referred at birth during the eight years of our study indicating that a congenital aetiology for trigger thumb is rare. Most children were noted to have the deformity in early childhood suggesting that it is an acquired condition.^{12,13}

The children who did not have an operation were younger than those who did and there were fewer bilateral cases. There was an overall rate of spontaneous recovery of 49% in the non-operated group. This appeared to increase with age. Thus, our results suggest that spontaneous resolution of trigger thumb is commoner than previously thought in older children.^{1,10} Spontaneous recovery was not observed while awaiting operation as the waiting time for surgery is short in our hospital. The decision to operate, however, was not based on age alone. We found that parents often pressed for surgical intervention even when a period of observation was thought to be appropriate.

Table II. The outcome for the 53 children in the deferred group

	Number of patients in the deferred group	Children who had spontaneous recovery	
		Number	%
Total	53	26	49
Age (mth)			
<6	6*	1	16.6
≥12	38*	22	57.9
≥36	16*	10	62.5

* number of patients in this age category

Table III. The outcome for the 166 children who underwent surgery for trigger thumb

	Total (%)	Recurrences (%)	Boys	Girls
		8 (4)	5	3
Age (mth)				
<36	127 (63.5) *	7 (5.6) †	5	2
≥36	73 (36.5) *	1 (1.4) †		1

* number of thumbs operated on in this category

† results expressed as percentage of the number of thumbs operated on in each age group

We could find no reference to recurrence after surgery in the literature. In our group, the overall rate of recurrence was 4.0% and was higher in younger patients. The reason for this is not clear, but may be due to the difficulty in achieving an adequate release in a very small finger. There were few complications of surgery, with three superficial infections.

It has been stated that there is an increased chance of a permanent contracture of the interphalangeal joint if surgical release is delayed until the children are more than three years of age.¹ We operated on 61 children above this age. There were no signs of residual contracture before discharge or on review which is in agreement with the findings of other authors.^{2,7}

In summary, our study suggests there may be a higher rate of spontaneous recovery than previously reported. Overall, of those children referred with a trigger thumb 86% had surgical release. Our data suggest that in many of these children, if deferred, the condition would have resolved spontaneously. A more conservative approach to treatment may prevent unnecessary operation. After a mean follow-up of almost five years the postoperative rate of recurrence was 4.0%. Recurrence was commoner in younger children and may be due to an inadequate release in a small digit.

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