Thyroglossal duct lesions in childhood — a review of experience in Nigerian children

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Summary

This is a retrospective study of 36 children with thyroglossal duct lesions managed at a tertiary hospital in Nigeria, between 1993 and 2003. The aim was to determine the pattern of presentation and outcome of management. The majority of patients presented with a chronic thyroglossal sinus with associated recurrent inflammation. The location and relationship of the lesions to the hyoid bone were similar to those encountered in the rest of the world. Despite their well-documented clinical features, thyroglossal duct lesions were misdiagnosed in some patients. The main complications were surgical site infections and recurrence. A plea is made for clinicians to pay attention to clinical and operative details so as to diagnose these lesions accurately and manage them properly.

Lesions arising from the thyroglossal duct are of clinical importance because of the related high incidence of recurrent inflammation, disfigurement and neoplastic change. The clinical features of thyroglossal duct remnants have been well documented. This developmental anomaly continues to be misdiagnosed and inappropriately treated, leading to troublesome recurrences. While much has been written on lesions of the thyroglossal duct in developed countries, this is not so in Africa. This article reports our experience with these lesions in Nigeria.

Patients and methods

All cases of childhood neck lesion managed at the Jos University Teaching Hospital from March 1993 to February 2003 were reviewed retrospectively. Data extracted from patients’ files, ward registers, operation notes and histopathology registers were analysed for age, sex, clinical features diagnosis and site of lesion, histology and outcome of management.\textbf{Results} A total of 178 children with various neck lesions were seen. Of these, 36 (age 4 - 14 years, median age 8 years) had thyroglossal duct lesions. There were 27 boys and 9 girls. In 14 children, the lesions were cystic; and 22 had a discharging sinus/fistula. Twenty-seven children had a history of recurrent inflammatory lesions, of whom 23 had a chronic acquired sinus, while 4 had cysts. Of those with chronic sinus/fistula, 12 had previously had incision and drainage of the cysts, 8 had an attempted excision and in 2 the cysts had ruptured spontaneously. Swabs from 24 of the children (6 cysts, 18 sinuses) grew \textit{Staphylococcus aureus} (N = 12), \textit{Haemophilus influenzae} (N = 8) and \textit{Streptococcus pyogenes} (N = 4). The lesions were midline in 27 patients and on the left of the midline in 9. The lesions were adjacent to the hyoid bone in 18 patients, suprahoid in 11 and subhyoid in 7. All the patients underwent Sistrunk’s operation. Fourteen patients had recurrent lesions, 6 of whom had a chronic sinus pre-operatively; in 5, the lesion had been misdiagnosed. Multiple operations (2 - 5 procedures) were needed to treat the recurrences (Table I). Most recurrences were cured after three sessions of surgery. Table II lists postoperative complications, other than recurrence. The commonest complication was wound infection in 17, followed by recurrence in 14 and stridor in 8 patients. Wound infection and stridor occurred more frequently in those requiring multiple operations.

The histological appearances are shown in Fig.1; columnar epithelium was the most common finding. No case of malignancy was found, but histological reports had not been recorded in 8 cases. No postoperative hypothyroidism was recorded.

Discussion

Misdiagnosis and recurrent inflammation are the main causes of inappropriate and inadequate surgery, which leads to a high rate of recurrence. The preponderance of boys in our study is similar to that in some earlier reports but is at variance with the equal gender distribution reported by others. Three-quarters of
TABLE I. PATIENTS REQUIRING MULTIPLE SURGICAL PROCEDURES

<table>
<thead>
<tr>
<th>Surgical procedures</th>
<th>No. of patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td>2</td>
<td>4</td>
</tr>
</tbody>
</table>

TABLE II. POSTOPERATIVE COMPLICATIONS FOLLOWING OPERATIONS FOR HYPOGLOSSAL DUCT LESION IN NIGERIAN CHILDREN

<table>
<thead>
<tr>
<th>Complication</th>
<th>Number of children with complication</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wound infection</td>
<td>17</td>
<td>47.2</td>
</tr>
<tr>
<td>Stridor</td>
<td>8</td>
<td>22.2</td>
</tr>
<tr>
<td>Haematoma</td>
<td>4</td>
<td>11.1</td>
</tr>
<tr>
<td>Keloid</td>
<td>3</td>
<td>8.3</td>
</tr>
<tr>
<td>Recurrence</td>
<td>14</td>
<td>38.9</td>
</tr>
</tbody>
</table>

Some patients had multiple complications.

Fig. 1. Histological results for thyroglossal duct lesions seen in 22 Nigerian children.

Secondly, lesions of the duct can occupy ectopic sites, as occurred in one-quarter of our patients. Congenital association with the pyramidal lobe of the thyroid gland has been suggested as the cause of the frequent location of these lesions to the left of the midline. Other unusual sites include the base of the tongue, thyroid and suprasternal regions. Thyroglossal duct lesions may therefore be confused with midline dermoids, lymph nodes, branchial cyst/sinus and lipoma. In general, a midline cervical cystic lesion, especially around the hyoid bone, moves with deglutition and protrusion of the tongue is likely to be a thyroglossal cyst. A thyroglossal sinus, on the other hand, often discharges a viscid, slimy, semi-opalescent fluid. The consequence of misdiagnosis and chronic inflammation is inadequate and inappropriate surgery, with attendant high rates of recurrence. Of our 14 patients with recurrences, 6 had a chronic sinus, 3 had a previous simple excision and 5 had misdiagnosed lesions. Chronic inflammatory change with scarring around the tract may lead to difficult incomplete dissection of the tract, resulting in recurrence. Extra cyst or tract missed at the time of dissection may also cause recurrence. After the first operation, subsequent procedures become progressively more difficult and hazardous, with more complications such as stridor and further recurrence. Our experience, like that of others, shows that once recurrence occurs several operations may be required to achieve a final cure. This can pose a financial burden on the parents, and carries surgical and anaesthetic risk to the patient.

The following recommendations may help to reduce postoperative morbidity.

1. Pre-operative diagnosis should be as accurate as possible; if doubt exists, ultrason will demonstrate the cystic nature of the lesion.

2. An inflamed thyroglossal cyst should not be incised unless absolutely necessary, as in florid and progressive inflammation.

3. The operation of choice remains the Sistrunk procedure, which should be performed early, at whatever age, when the lesion is discovered. At the first dissection, when scarring is minimal and sinuses have not yet developed, the operation is relatively easy to perform with less prospect of recurrence. Another advantage of early operation is to safeguard against malignant transformation.

4. Subsequent operations for recurrence should be as radical as possible, because limited excision may result in failure.

In conclusion, a plea is made for surgeons to pay attention to clinical and surgical details to ensure correct diagnosis and hence appropriate treatment of thyroglossal duct lesions. Management of these lesions is associated with high morbidity, especially recurrence, in our environment. Early and adequate intervention may reduce the incidence of recurrence.

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REFERENCES