Glossal cysts in four infants

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SUMMARY Cysts at the base of the tongue causing stridor may be fatal if they are not recognised and treated. Digital palpation along the surface of the tongue to the epiglottis is a useful diagnostic method. An operative technique that might avoid the need for tracheostomy is described.

Cysts at the base of the tongue are a rare cause of stridor in infancy and may cause death if they are not treated. Tense midline swellings immediately superior to the epiglottis, they cause chronic or recurrent stridor, which usually starts soon after birth. We describe four infants with glossal cysts who were seen at this hospital between April and December 1985.

Case reports

CASE 1

A 4 week old boy was referred with pneumonia, diagnosed on the basis of two days of cough and shortness of breath, and fever, tachypnoea, chest indrawing, and crepitations. The mother had noted noisy breathing and vomiting since birth. On examination the child was noted to have inspiratory stridor. A tense midline cyst measuring 1.5×1.5 cm was palpated just superior to the epiglottis by inserting the fifth finger along the upper surface of the tongue (figure). Direct laryngoscopy confirmed the presence of a cyst at the base of the tongue; it obscured any view of the epiglottis or vocal cords.

Figure Direct palpation of glossal cysts.

A tracheostomy was performed under local anaesthesia. The cyst was incised yielding a viscous milky mucoid fluid and an endotracheal tube was easily inserted before the cyst was deroofed. A tongue traction stitch was inserted in the hope that should postoperative swelling obstruct the upper airway the obstruction would be relieved by pulling the tongue forwards. This technique failed and tracheostomy was required for four days post-operatively.

CASE 2

A 4 month old boy was referred with a history of several episodes of 'blocked nose, hoarse cry, and severe pneumonia.' Examination showed a well child with no respiratory signs. Direct palpation of the tongue and direct laryngoscopy showed a cyst identical with that in case 1. At operation needle aspiration of the cyst without anaesthetic again yielded milky viscous fluid. An endotracheal tube was inserted and after some difficulty finding the roof of the deflated cyst it was excised. A tongue traction stitch was inserted because of postoperative stridor; this settled over three days.

CASE 3

An 18 month old girl was referred with a history of stridor since birth. She had had three previous admissions to rural health centres with 'pneumonia.' A fifth finger inserted along the surface of the tongue, but not as far as the epiglottis, failed to palpate the cyst. It was later diagnosed by direct laryngoscopy under general anaesthesia. Cystectomy was difficult to perform and a tracheostomy was required for six weeks.

CASE 4

A 3 month old boy was admitted with a diagnosis of upper respiratory infection and a blocked nose. Stridor was immediately apparent and a cyst identical with those in the previous cases was detected by palpating along the surface of the tongue. The mother refused a tracheostomy and the child died suddenly of acute upper airways obstruction three days later.

Discussion

Cysts arising from the dorsal surface of the tongue

may present with stridor, feeding difficulties, symptoms of inhalation, and respiratory distress.¹ Some arise from thyroglossal remnants and some are simple mucus retention cysts. Thyroglossal cysts at the upper end of the developmental tract occur in the region of the foramen caecum. Mucus retention cysts typically occur in the groove between the tongue and epiglottis; the cysts reported here were probably of this last kind.

Although these cysts are rare, they can be easily diagnosed. The technique of inserting the little finger along the surface of the tongue has been recommended in the routine examination of children with chronic or recurrent stridor,¹ although it is not mentioned in standard paediatric textbooks. Palpation of a tense cyst by the little finger produces an unmistakable sensation. We have shown the usefulness of this technique, although, as case 3 illustrates, palpation must extend to the epiglottis to avoid missing the cyst.

We encountered several perioperative problems. They included airways obstruction during induction of anaesthesia and postoperatively, and difficulties in finding the roof of the cyst once the contents had been aspirated. We therefore propose the following operative method: an anaesthetic that can be inhaled should be given, and a traction stitch placed in the tongue. Pulling the tongue forward should relieve upper airway obstruction. Once the child is paralysed a holding stitch should be inserted into the cyst roof to allow the contents to drain and facilitate endotracheal intubation and simple marsupialisation. Postoperatively the tongue stitch should remain taped to the face until all stridor has resolved. This may avoid tracheostomy with its potential for

serious complications in this age group.^{2,3} Pre-operative tracheostomy with local anaesthesia should be considered in hospitals without an experienced paediatric anaesthetist. A vertical rather than a transverse incision is preferable for urgent tracheostomies because deviation from the midline is less likely to occur.^{2,3} The cosmetic result is quite acceptable.

The occurrence of four cases of glossal cysts in a nine month period in a population of about 300 000 may be a coincidence. Glossal cysts have not previously been reported from Papua New Guinea and paediatricians and surgeons with considerable experience in the country have not seen a case (JKA Clezy *et al*, personal communication), but previous cases could have been misdiagnosed as pneumonia, which is a common cause of death in this community.

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Cellular phosphate in renal tubular acidosis

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SUMMARY In two infants with distal renal tubular acidosis phosphate depletion was observed in the extracellular and intracellular compartments of the erythrocytes. Treatment corrected this disturbance over a period of several months. Cell phosphate deficiency may contribute to the adverse effects of renal tubular acidosis on bone.

Distal renal tubular acidosis is characterised by low serum concentrations of bicarbonate, raised serum concentrations of chloride, sustained metabolic acidosis and inadequate urinary acidification (pH >6). In addition to hyperchloraemic acidosis, there is often a variety of associated disturbances in electrolyte metabolism like hypokalaemia and hypercalciuria. The clinical manifestations of these abnormalities may include muscle weakness, osteomalacia or