CLEFT PALATE AND ITS IMPACT ON SPEECH

Unclear speech in children is commonly believed to be caused by a “short” tongue (tongue-tie), hearing difficulties, irregular or misplaced teeth, a blocked nose, or even slow speech development. However, a cleft palate may also be a cause of a child’s unclear speech, as it impacts the ability to clearly produce speech sounds. Unnoticeable outwardly, cleft palates may sometimes go undetected during infancy. Left untreated, they can cause life-long speech and/or feeding difficulties.

INCIDENCE OF ORAL CLEFTING IN SINGAPORE

Asian countries are known to have one of the highest incidences of oral clefting in the world compared with European and African countries. In Singapore, oral clefts, such as clefts of the lip and palate, are among the most common birth defects, occurring in approximately 2.07 per 1,000 live births.

Local incidence varies according to ethnicity, with the highest incidence seen among the Chinese (1.64 per 1,000 live births) followed by Malays (0.29), Indians (0.10) and Others (0.04). Approximately 45 percent of individuals with oral clefts present with a cleft lip and palate; 40 percent with a cleft palate only and 15 percent with a cleft lip only.

WHAT IS A CLEFT PALATE?

A cleft palate is a birth defect in which a baby is born with a gap in the roof of the mouth.

The palate separates the mouth from the nose, and is made up of two parts:

- **Hard palate:** The bony hard palate, towards the top row of teeth.
- **Soft palate:** Also known as the velum, towards the throat; which is made up of muscles which move when a person talks or swallows.

A cleft palate occurs when the right and left halves of the palate fail to fuse into a single palate. This may result in a gap, i.e. the cleft, in the soft palate (Figure 1) or in both the soft and hard palate (Figure 2).

In addition, the cleft can be incomplete or so mild that the only visible sign is a split in the uvula – the lowermost part of the soft palate that hangs down in the midline in front of the pharynx. This is called a bifid uvula (Figure 3).

A cleft palate may also occur as part of a syndrome i.e., when there are birth defects in other parts of the body.

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PRESENTATION OF A SUBMUCOUS CLEFT PALATE

A particular form of cleft palate, known as a submucous cleft palate (SMCP), occurs when the muscles in the palate are abnormally positioned in much the same way as a complete cleft palate, and covered by mucosal tissue. Depending on the extent of the SMCP, it may or may not be visible to the naked eye. This makes the SMCP difficult to diagnose, and as such its incidence is likely to be under-reported worldwide.

SMCP may consist of one, two or three of a diagnostic triad used to confirm a diagnosis:

1. A bifid uvula
2. A zona pellucida - incorrect alignment of muscles at the centre of the palate resulting in a translucent vertical line down the soft palate
3. A v-shaped notch at the junction of the hard and soft palate

Examinations by experienced craniofacial plastic surgeons, specialist speech therapists, and otolaryngologists proficient in subtle craniofacial defects are crucial to early identification. The Cleft and Craniofacial Centre at KK Women’s and Children’s Hospital (KKH) has seen a 10 to 20 percent increase in the number of cases of SMCP each year, which are mostly referrals after birth.

TREATMENT FOR CLEFT PALATE

Treatment for cleft palate usually involves surgery by a craniofacial plastic surgeon. Treatment for SMCP can comprise surgery and speech therapy individually or in combination, depending on the severity of the defect, and the extent to which it affects normal speech and feeding.

A cleft palate is best fixed when a child is between six and nine months old, but as many as one in two children with the problem go undiagnosed during infancy. Caregivers may assume that children who have poor articulation and resonance difficulties will “grow out of it” with time. However, delayed treatment can have long-term consequences, such as resonance and speech problems, especially hypernasal speech, which can be life-long.

COMMON SIGNS AND SYMPTOMS OF A CLEFT PALATE

- Difficulty in feeding (nasal regurgitation of milk through the nose, slow feeding, poor sucking)
- Hearing difficulties, typically due to otitis media (middle ear effusion) and poor ventilation of the eustachian tube, associated with the cleft palate
- Disordered speech patterns (e.g., butterfly said as “uh-er-eye”, or sounds with ‘s, sh, ch, t, p’ which require adequate oral pressure)
- Hypernasality (excessive air from the nose when speaking) due to velopharyngeal inadequacy
- Hoarseness of voice

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