Non-accidental injury of the head and neck

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Abstract

Ear, nose and throat surgeons see a higher proportion of children than any specialty other than paediatricians and specialist paediatric surgeons. It is vital that a person working in the speciality is aware of specific otolaryngological and head and neck signs that may suggest non-accidental injury, such as pinna bruising, but also have an awareness of other findings that may raise concerns of abuse or neglect. This article discusses specific findings in head and neck injuries associated with non-accidental injury, as well as the management of other safeguarding issues that may present to the otolaryngologist.

Keywords Child protection; epistaxis; neglect; non-accidental injury; pinna bruising; safeguarding; torn frenum

Introduction

Doctors have an obligation to ensure the safety and well-being of children and young people. The General Medical Council advises that doctors must 'consider the safety and welfare of children, whether or not you routinely see them as patients'. You must also consider whether an adult patient poses a risk to children or young people'.[1] Safeguarding is the action that is taken to promote the welfare of children and protect them from harm.

Ear, nose and throat surgeons see a higher proportion of children than any specialty other than paediatricians and paediatric surgeons. Clinicians must be aware of specific otolaryngological signs that suggest non-accidental injury and recognize other findings that suggest abuse or neglect. Advice on child protection issues is always available from the local child protection team or consultant paediatrician, but all clinicians are obliged to ensure they can identify concerning features and can manage the situation appropriately to ensure the young person's safety.

Recognizing head and neck injuries suggestive of non-accidental injury – physical abuse

Ear trauma

Differing bruising patterns have been identified in physical child abuse compared to accidental bruising (Box 1).[2] Accidental facial bruising, as in trips and falls, occurs in a 'T-zone' distribution of the forehead, nose, lip and chin, and on the occiput, as the child falls directly forward or backwards.[3] Accidental bruising to the ear is uncommon and external ear injuries, including swelling and lacerations, and traumatic tympanic membrane perforations, may be indicative of physical abuse.[4,5] A specific pattern of abusive bruising is bruising to the pinna, where the shape of the bruise follows the line of anatomical stress, rather than the injuring object (Figures 1 and 2).[6] Left ears are more likely to be injured non-accidentally. The presence of bilateral ear injuries raises the level of concern about physical abuse.

Observations in bruises that may suggest the possibility of physical abuse[2]

Features of bruising that suggests the possibility of physical child abuse include:

- bruising in children who are not independently mobile **(those who do not cruise do not bruise)**
- bruising in babies
- bruises that are seen away from bony prominences
- bruises to the face, back, abdomen, arms, buttocks, ears and hands
- multiple bruises in clusters
- multiple bruises of uniform shape
- bruises that carry an imprint e.g. of an implement or cord
- bruises with surrounding petechiae

Box 1

Frenum and intra-oral injuries

The frenum is the fold of buccal mucosa arising from the gingiva to the midline of the upper lip. Injury to the frenum was previously thought to be pathognomic of physical abuse. When torn, the frenum appears white or sloughy soon after the injury (Figure 3). The systematic review by the Royal College of Paediatrics and Child Health (RCPCH) indicates that, although frenal injuries are described in abusive injuries, they have also been noted following anaesthetic intubation, cardiopulmonary resuscitation, airbag injury and following accidental blows to the mouth.[7]

The RCPCH committee opined that an accidental torn frenum would be a memorable injury for carers, as there is likely to be considerable bloody saliva from the child's mouth following the injury. *An unexplained torn labial frenum should be fully investigated* to exclude the presence of occult injuries. If no occult injuries or social concerns are identified, there is inadequate evidence to suggest that a torn frenum alone is pathognomic of child abuse.

Other intra-oral injuries described in abusive trauma include dental injuries, lacerations from forced insertion of objects into the mouth, and lacerations and bruising to the lips (Figure 4). Oral bleeding is the most common presenting symptom. The oral cavity should always be examined in suspected cases of physical abuse.

Pharyngeal injuries

Pharyngeal injuries in children are rare, and most commonly iatrogenic (e.g. from nasogastric tube insertion). Forced insertion of objects or finger into the pharynx can cause pharyngeal

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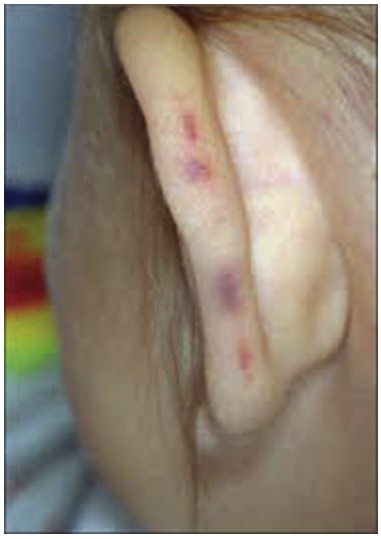

Figure 1 Pinna bruising suggestive of physical abuse. Note how the bruising follows the lines of anatomical stress.

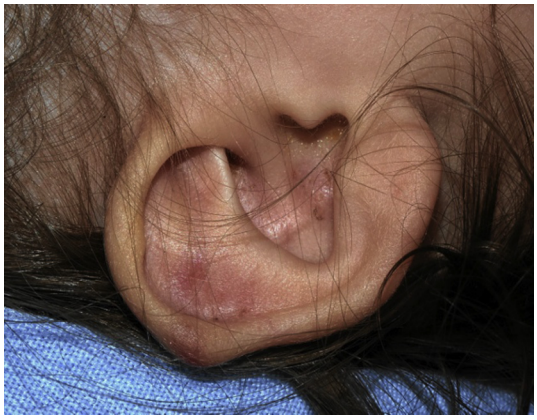

Figure 2 Pinna bruising suggestive of physical abuse. The presence of petechiae is a concerning feature.

lacerations or perforations. The child may present with dysphagia, haemoptysis, haematemesis, drooling and pyrexia.[5] There may be a delayed presentation from the time of injury. Clinical and radiological evidence of surgical emphysema may be present, and a chest X-ray may demonstrate pneumomediastinum and/or pneumothorax. A contrast swallow or rigid endoscopy may be necessary to confirm the location of the injury.

The mechanism of injury must be established. An iatrogenic cause would be evident, and an accident, such as a fall with something in the mouth, would have a memorable history and is likely to be limited to the mobile child. In documented cases of abusive injury, the children are typically infants or neonates. Co-existent injuries, such as rib fractures and bruising, have been described in 50% of children with non-accidental pharyngeal injuries. All children with pharyngeal injuries should be referred for a thorough safeguarding evaluation.

Epistaxis

Epistaxis in childhood is not uncommon but is unusual in the first 2 years of life and is likely to represent trauma or a medical

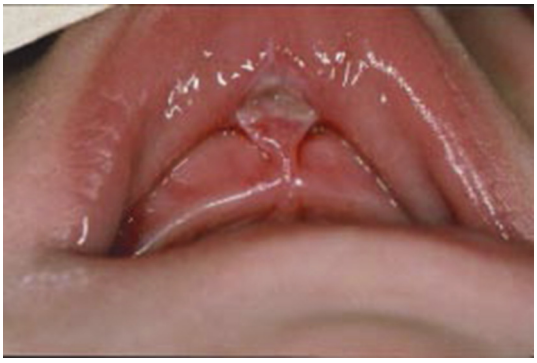

Figure 3 A torn frenum with the presence of slough, suggesting it is a recent injury.

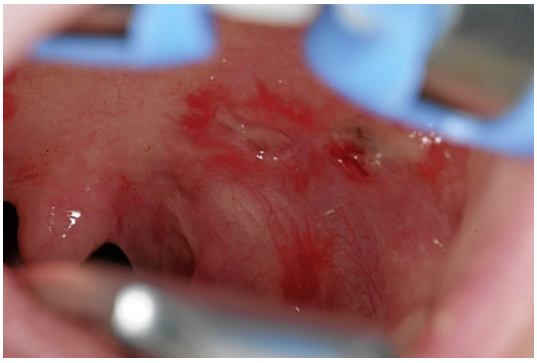

Figure 4 Lacerations to the soft palate caused by the forced insertion of an object into the mouth. Note the presence of slough.

condition.[8] A more controversial topic is the association between epistaxis and accidental or deliberate asphyxiation. The RCPH Child Protection Evidence guidelines state that epistaxis in children under 2 in the absence of known trauma or haematological cause, is strongly associated with asphyxiation and such children should undergo a formal evaluation to exclude this as a cause.[9] Oronasal haemorrhage or presence of sanguinous fluid in the oropharynx has been described following suffocation injuries, and likely to be due to pulmonary alveolar haemorrhage. Other associated symptoms included altered skin colour, respiratory distress, altered heart rate, and a possible history of apparent life threatening events (ALTEs). If, after a thorough ENT assessment, no cause for epistaxis can be detected in a young child or infant, the case should be discussed with the paediatric team.

Safeguarding in head and neck surgery

Safeguarding is the action taken to promote the welfare of children and protect them from harm. ENT clinicians need to be aware of features other than direct injury that may suggest a child is at risk. They must also know who to contact if concerns are raised.

Neglect

Neglect is the failure to meet a child's basic needs and is the most common form of child abuse. The types of neglect are summarized in Box 2. One in ten children has experienced neglect.[10]