

Unilateral epiphora in an adolescent

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Case history

A 15-year-old girl from a village near Pekan town was presented to the clinic accompanied by her parents. The girl had a 5-day history of tearing from her right eye associated with itching. She had visited another general practice (GP) clinic 2 days earlier where she was given some eye drops. None of her family members or contacts had conjunctivitis. There was no history of swelling, trauma, insect bite or dust in her eye. She had no cough, fever or other coryzal symptoms and there was no history of asthma or allergic rhinitis in the patient or her family members.

On general examination, the patient was found afebrile with clear lungs and had no lymphadenopathy, murmurs on auscultation of the heart and hepatosplenomegaly. On inspection, mild conjunctival injection of her right eye with a small dark pigmented and elevated lesion seen at the margin of her right upper eyelid (Figure 1). This lesion was thought to be a mole during her first clinic visit.

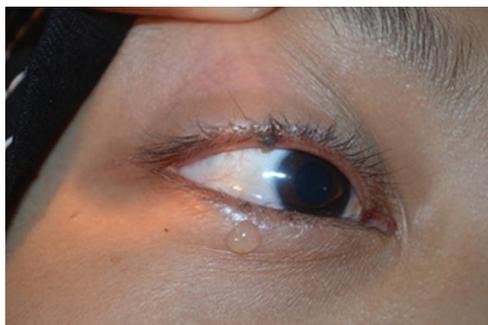


Figure 1. A dark pigmented lesion

Careful inspection with the help of a magnifying lens revealed that the lesion had multiple small extensions. These extensions were removed using crocodile forceps and were sent to the laboratory for academic purpose. The specimen is shown in Figure 2.



Figure 2. Specimen removed intact with crocodile forceps

Questions

1. What is your most probable diagnosis?
2. What are common clinical presentations of this condition?
3. What is the principle of managing this condition?
4. Are there any precautions to be taken during the management? Why?
5. Do you need to notify the health authorities about this condition?
6. Is this condition common? How common is it in Malaysia?

Answers

1. The provisional diagnosis is the presence of a tick bite in the eyelid. The small tick on the eyelid is mistaken for a mole because of its small size, colour, flat appearance and adherence to the lid margin. By the time patient arrives to the clinic, the tick may have started to feed and become engorged with blood making it more visible. Upon careful inspection with the aid of a magnifying glass, small extensions from the body representing the tick's legs are revealed. The upper eyelid of the right eye is slightly swollen and epiphora is noted. There is neither ptosis, lymphadenopathy nor any discharge from the nostrils. The differential diagnoses for epiphora include nasolacrimal duct obstruction, keratitis, abrasion or presence of foreign body on cornea or under lid.¹
2. Tick bites on eyes and ears are very common in children. The general clinical presentations of tick bites (to the eyelid margin) are tearing of the eyes, swelling, itchiness and conjunctival injection.^{2,3} In cases of intra-aural ticks, there can be pain in the ear and the neck. In some cases of intra-aural tick bite, facial palsy has been reported.⁴⁻⁶

Common causes of unilateral epiphora are punctal obstruction, canalicular obstruction, nasolacrimal duct obstruction, lid malposition conjunctivitis, sinusitis, Bell's palsy and ocular surface disorders. Rare causes of unilateral epiphora include canaliculitis and papilloma of the lacrimal sac. Six cases of unilateral epiphora caused

by canaliculitis secondary to a herpes simplex infection and a case of recurrent Schneiderian papilloma of lacrimal sac were reported.^{7,8}

A case of tick bite on upper eyelid with epiphora due to trichotillois has been reported.⁹ Also, five cases of tick bite on eyelid with a complication of orbital myositis and swelling of eyelids along with a case of left abducens nerve palsy have been reported.^{3,10} Association of Orbital myositis with *Borrelia burgdorferi* infection (Lyme disease) has also been found.¹¹

3. The principle of managing tick bites on the eyelid includes the prompt and gentle manual removal of the tick. However, ticks are usually difficult to remove because of its hour-glass shaped hypostome of the mouthparts. Also, the secretion of cement-like substance helps it to anchor to the skin. In this case, topical anaesthetic eye drops like Alcaine 0.5% (proparacaine hydrochloride) had been applied before the removal of the tick using a crocodile forceps. There was slight discomfort during the process of removal; however, there was no bleeding.

The management of tick bite has been described widely and in some practices the methods used are questionable and potentially unsafe. Application of lighter fuel to the tick on the eyelid using cotton swab to asphyxiate the tick followed by its removal with a forceps has been described. The lighter fuel may irritate the eye as well as the tick, which may cause the tick to inject toxic material into the tissue.¹² In another setting, the eye was anaesthetised with proparacaine ophthalmic (Ophthaine) and a chalazion clamp was used over the tick, which was slowly tightened to extrude the tick gradually.¹³

In young children, it is preferable to remove eyelid tick under general anaesthesia by an ophthalmologist. Ticks must be removed promptly to prevent them from secreting toxins. The ticks should be removed using blunt forceps by holding it as close to the mouthparts of the tick as possible so as not to leave any remnant mouth parts of the tick. Several studies found mechanical removal of ticks using a blunt, medium-tipped and angled forceps as the most effective process.^{14,15}

Antibiotics were not prescribed to this patient. Only oral analgesic and antihistaminic were given for symptomatic relief. In tick bites on eyelid, broad spectrum antibiotics can be given to children as prophylaxis to prevent complications.^{3,10,16}

4. Ticks may have either a soft or a hard shell. The body of the tick must not be crushed to prevent the release of toxins into the tissues.^{15,16} During the removal of a tick, the following measures must be avoided:
 - Handling the tick with unprotected hands.
 - Using sharp forceps.
 - Crushing, puncturing or squeezing of the tick's body.
 - Applying substances such as alcohol, petroleum jelly, gasoline, etc.
 - Applying heat with a match box or candle.
5. There is no need of mandatory notification of tick bite cases to the health authorities.¹⁷ However, when cases of tick bite are seen frequently in a specific area, it is beneficial to notify the health authorities so that preventive measures such as fumigation can be carried out. Little information is available on the relationships of tick bites with diseases in Malaysia, although, in other areas of the world, several species of ticks are important vectors of human diseases.^{18,19}
6. Tick bites are common and have been reported in many parts of the world.^{3,12,13,20-23} There are few study reports on tick bites in Malaysia. Tick bites were commonly reported in the east coast states of Malaysia, in which 40 cases in Kelantan and 91 in Kuantan, Pahang.^{5,6} Three cases of intra-aural tick bites with varied clinical presentations were reported in the state of Penang.²² In another case, a Japanese entomologist who visited Ulu Gombak forest located in the state of Selangor had reported tick bites.²³

Conflict of interest

None.

How does this paper make a difference in general practice?

- This paper aims to create awareness of the common tick bite presentations in general practice.
- Prompt detection and management is essential to prevent complications associated with tick bites.
- Careful removal of ticks using a blunt, medium-tipped and angled forceps is the most effective process.
- Patient education is important to prevent tick bites. Recommended actions to prevent tick-borne diseases include avoiding tick-infested areas, wearing long pants and tucking it into the socks, applying N,N-diethyl-m-toluamide (DEET) insect repellents, using bed nets when camping and being careful in exposed areas.¹⁶ Household pets may bring ticks into the home; therefore, they must be treated regularly.

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