Case Report

Early maternal death due to acute encephalitis

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Abstract
Maternal death in an unmarried woman poses a medico-legal challenge. A 24-year-old unmarried schoolteacher, residing at a boarding place, had been admitted to hospital in a state of cardiac arrest. At the autopsy, mild to moderate congestion of subarachnoid vessels and oedema of the brain was noted. An un-interfered foetus of 15 weeks with an intact sac and placental tissues were seen. Genital tract injuries were not present.
Histopathological examination showed diffuse perivascular cuffing by mononuclear cells suggestive of viral encephalitis, considering the circumstances of death and the social stigma of pregnancy in this unmarried teacher, the possibility of attempted suicide by ingestion of a poison was considered. *Abrus precatorius* (olinda) seeds commonly found in the area is known to produce acute encephalitis as well as haemorrhagic gastroenteritis and pulmonary congestion was also considered as a possible cause for this unusual presentation.

Key words: Acute encephalitis; Maternal death; Abrus precatorius

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Introduction

Maternal death in an unmarried woman poses a medico-legal challenge as there is a possibility of criminal interference and concealment of pregnancy leading to poor antenatal care. The following case was an early maternal death due to encephalitis.

Case presentation

A 24-year-old unmarried school teacher, residing at a boarding place was admitted to hospital, in Sri Lanka in a state of cardiac arrest. She succumbed to death despite resuscitation. The history was obscure except for the fact that she had collapsed in side a bus following several bouts of vomiting.

At autopsy, her clothing contained blood stained vomitus. Mild to moderate congestion of subarachnoid vessels and oedema of the brain was noted. Severe pulmonary congestion and oedema with non crepitancy of the lungs were noted. An un-interfered foetus of 15 weeks with an intact sac and placental tissues were noted. Genital tract was devoid of any injuries.

Histopathology of the brain showed cerebral oedema, congested cerebral vessels and a moderate to severe, diffuse infiltration of mononuclear cells with perivascular cuffing in the tempero-parietal area of the brain (Figure 1) with infiltration of meninges. Infarctions, active plaque lesions, lipid-laden macrophages, haemorrhage or necrosis was not seen. The lungs showed severe vascular congestion and oedema but significant inflammation was not seen. Lungs showed congestion and oedema. The findings of other organs were unremarkable.

Blood was negative for common poisons. Serology was negative for influenza, parainfluenza, H1N1 and dengue virus. Serology for Japanese encephalitis, CSF studies and immunoflourecent studies were not be performed at the time of autopsy.

Discussion

Sri Lanka is a country that stands out for its long-term commitment to safe motherhood and has one of the lowest maternal mortality rates in the developing world (1). In 2010, the maternal mortality rate accounted for 31.12 deaths per 100,000 live births (2) in comparison with the same in India, which accounted for 200 per 100,000 live births (3).

Today, over 96% of deliveries in Sri Lanka are attended by a skilled birth attendant and over 99% take place in a health facility with a referral system in place to ensure transport to one of 45 hospitals if complications occur. All first pregnancies and high-risk pregnancies are referred to health facilities with obstetricians. In Sri Lanka, there is an active mechanism throughout the country where trained community midwives provide antenatal care for about 99% of women throughout their pregnancy (4). Over 93% of people today have access to basic health care. Health services are provided free of charge and few people are more than 1.4 km from the nearest health centre. Maternal and child health services are available at community level as a part of integrated reproductive health services (1). Reasons for ignoring the available well organized antenatal facilities by this unmarried mother could be for of concealment of her pregnancy due to social stigma.

At autopsy, death due to pneumonitis was initially suspected but was excluded by subsequent histopathology and serology findings. Although blood stained vomitus suggested a bleeding tendency, in the absence of other signs of bleeding such as cutaneous petechial haemorrhages or bruises, the possibility of a toxin or a poison causing hemorrhagic eneterocolitis needed to be considered.

Histopathological features which showed cerebral oedema with diffuse infiltration of the brain by mononuclear cells with perivascular cuffing were compatible with acute encephalitis. Although the serology for influenza, parainfluenza, dengue and HINI was negative, acute, disseminated encephalitis of an unknown aetiology could not be completely excluded. Encephalitis is a known cause of death in pregnancy (5) and is mostly due to HSV, and Japanese-B (6), and rarely due to rabies virus. Seasonal H1N1 influenza virus causing fatal encephalitis is not reported in Sri Lanka (7).

Even though these changes could be due to causes like multiple sclerosis, in this patient it was less likely due to the acute presentation, and absence of active plaque lesions or the lipid laden macrophages that are present in multiple sclerosis (8).

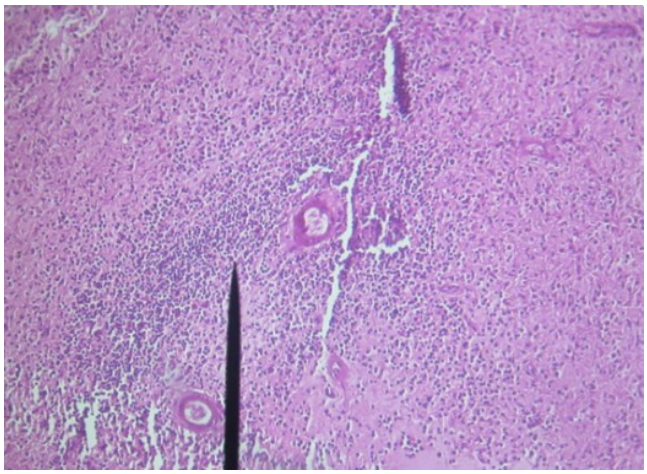

Figure 1 **Diffuse infiltration of mononuclear cells with perivascular cuffing in the tempero-parietal area of the brain (H and E stain x 40)**

Considering the circumstances of death in this case and the social stigma of pregnancy in an unmarried woman doing a respectable profession, the possibility of attempted suicide by a poison such as seeds of *Abrus precatorius* (olinda) commonly found in the area which can produce an acute encephalitis with haemorrhagic gastrocolitis, pulmonary congestion and oedema is also a possible causes for this encephalitis (9).

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Competing Interests
None

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