This review has established a lack of agreement between post-mortem skeletal survey radiology and autopsy findings in the lungs; in part, this was attributed to the lack of aeration of lungs after death.

## Ruptured interstitial pregnancy: a case report of a sudden maternal death in the late second trimester from a rare cause

Mohd Suhani Mohd Noor, Wan Zafirah Zamaliana Alias
*Department of Forensic Medicine, Sultanah Bahiyah Hospital, Alor Setar, Kedah, Malaysia*

**Introduction:** Interstitial pregnancy is a rare type of tubal ectopic pregnancy that occurs when implantation takes place in the interstitial segment of the fallopian tube. It remains one of the most difficult gestations to diagnose clinically and sonographically, hence a higher risk of rupture and catastrophic haemorrhage because of delayed diagnosis as the gestation progresses. We report a case of sudden maternal death from a ruptured interstitial pregnancy involving a woman at 27 weeks of pregnancy who was mistakenly thought to have a normal intrauterine pregnancy antenatally.
**Case description:** A 40-year-old woman, normally conceived gravida 7, para 4, abortus 2 at 25 weeks of pregnancy by date, was dead on arrival at the hospital after experiencing sudden abdominal pain. A forensic autopsy revealed more than 2100 ml of hemoperitoneum. The uterine cavity was empty, and the right uterine fundus had an asymmetric cystic bulge found to be a ruptured interstitial pregnancy with a 27-week-old male fetus.
**Discussion and conclusion:** The pathology of interstitial pregnancy and the distinction between this entity and the similar but distinct angular and cornual pregnancies will be described. This case report highlights a type of ectopic pregnancy rarely encountered in forensic pathology practice.

## A case report of a sudden adolescent death from a rare cause: rupture of a saccular thoracic aneurysm complicating undiagnosed coarctation of the aorta

Mohd Suhani Mohd Noor, Wan Zafirah Zamaliana Alias
*Department of Forensic Medicine, Sultanah Bahiyah Hospital, Alor Setar, Kedah, Malaysia*

**Introduction:** Coarctation of the aorta is one of the most commonly encountered congenital heart diseases accounting for about 7% of the cases. With early childhood diagnosis and the development of corrective surgical intervention, undiagnosed aortic coarctation presenting as sudden and unexpected death is today a rarity. Fatal complications such as aortic rupture or dissection, endocarditis and ruptured cerebral aneurysm can arise when left untreated. We report a rare case of sudden death involving an adolescent female found to have an undiagnosed aortic coarctation at autopsy with a saccular thoracic aneurysm and hemothorax.
**Case description:** A healthy 17-year-old girl was dead on arrival at the Emergency Department of a district hospital after collapsing at home following a short history of breathing difficulties. A forensic autopsy revealed massive left-sided hemothorax and a heretofore undiagnosed aortic coarctation with a pre-coarctation saccular thoracic aneurysm that has ruptured. On histology, the aneurysm wall was found to be deficient in tunica media with no evidence of dissection.
**Discussion and conclusion:** The clinicopathology of coarctation-associated aneurysms will be discussed. Despite their rarity, the forensic pathologist should consider the likelihood of aortic coarctation when confronted with the unexpected finding of a ruptured thoracic aortic aneurysm in the young.

## The fatal effect of underwater breath-holding exercises: a recent trend observed in the Northern Territory of Australia

Althea C. G. Neblett, Marianne Tiemensma
*Forensic Pathology Unit, Royal Darwin Hospital, Darwin, NT, Australia*

Hypoxic blackout refers loss of consciousness in underwater swimmers or divers, during an apnoea submersion preceded by hyperventilation, where alternative causes of unconsciousness have been excluded. This frequently occurs in shallow water; however, it can occur at depths greater than 5 meters. Hypoxic blackout occurs due to cerebral hypoxia from voluntary breath holding, whilst underwater, and is normally due to pre-submersion hyperventilation, which lowers the carbon dioxide ($CO_2$) level and delays the individual's urge to breathe. It is most common among fit swimmers, deep-water spear fishermen and free divers, but can occur in people performing underwater breath-holding exercises or meditation, including the practice of the well-described 'Wim Hof' hyperventilation breathing method.
We report three cases of fatal drownings associated with underwater breath-holding exercises seen over a 14-month period in the Northern Territory. The decedents were young and healthy adult men and known to practice underwater breath-holding exercises. Autopsy examination showed features seen in drowning; bilateral tympanomastoid haemorrhages were identified in two cases. No natural, traumatic, or toxicological cause or contributing factors were identified in any of these cases.
These preventable deaths highlight the need for increased public awareness and education about the risks associated with underwater breath-holding exercises.

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## Hypertrophic cardiomyopathy. There is more than what meets the eye

Althea C. G. Neblett, Marianne Tiemensma
*Forensic Pathology Unit, Royal Darwin Hospital, Darwin, NT, Australia*