



VENOUS AIR EMBOLISM DURING DIAGNOSTIC HYSTEROSCOPY: CASE REPORT OF A CATASTROPHIC EVENT.

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ABSTRACT

Vascular air embolism, a subset of gas embolism, is the entrainment of air (or exogenously delivered gas) from the operative field or other communication with the environment into the venous or arterial vasculature, producing systemic effects and we hereby present such a case report.

KEYWORDS : Vascular air embolism; venous ; arterial vasculature.

Introduction:

Air embolism is an uncommon but potentially catastrophic complication of diagnostic as well as operative hysteroscopy¹. It is reported to have an incidence of 10-50% while incidence of subclinical emboli during operative hysteroscopy is significantly underestimated². Here, we report a case of massive venous air embolism occurring during diagnostic hysteroscopy using normal saline as distending media in a young female with no underlying medical disorder. The objective of this case report is to alert the operating team to the risk of room air embolism during endoscopy.

Case report:

A 35 year old, ASA 1 female patient with a history of secondary infertility was posted for diagnostic hysteroscopy. Routine monitors were attached and anaesthesia was induced with IV fentanyl and propofol followed by insertion of no three (3) igel. Anaesthesia was maintained with oxygen, nitrous and halothane. Patient was placed in lithotomy position. Hysteroscopy was performed using normal saline pressurized by pressure infuser on three liters non collapsible bottle. At the end of the procedure, as the patient was about to be extubated, the monitor alarms got activated and the anaesthesia team noted a sudden fall in heart rate (90 to 38 bpm), blood pressure and oxygen saturation. End tidal CO₂ monitoring was not available. Inj atropine (0.6 mg) and inj. adrenaline (1 mg) were administered and Cardiopulmonary resuscitation was started immediately and trachea was intubated with endotracheal tube 7.5 mm after removing Igel. Infusion adrenaline, nor adrenaline and dopamine were started. The anaesthesia team noticed crepitus in both the inguinal regions while palpating the area to take sample for blood gas analysis and the femoral venous sample had air bubbles in the syringe on aspiration. Cardiopulmonary resuscitation was done for 45 minutes but patient could not be revived.

Discussion:-

Gas embolism is a potentially life threatening complication of hysteroscopy with an incidence of fatal embolism around three per 17000 procedures³. Gynecologic endoscopic procedures introduce insufflating gas as possible source of embolic phenomenon. Other sources of pulmonary embolism during hysteroscopy include air bubbles in the tubing of irrigation solution entering open venous sinuses under pressure. The pressure differential between the endometrial cavity and the right heart can cause passage of air from the endometrial cavity to the uterine veins and subsequently, the systemic venous circulation. Also, the number of insufficient exchanges during the procedure leaving the cervical canal opens to air while removal & ingestion of hysteroscope are some of the other important factors which play an important role in the occurrence of embolism⁴.

However, in our patient, the exact etiology of air embolism is not clear. The surgeon reported a cervical laceration which might have led to forced entry of air bubbles causing a pulmonary embolism. Later on, the surgeon and the assistant admitted their ignorance about the importance of evacuating air bubbles in the tubing of irrigation solution.

Although venous air embolism is an infrequent complication, all the precautions should always be taken beforehand keeping in mind the possibility of its occurrence.

Every institute should issue practical guidelines for the prevention and management of gas embolism during hysteroscopic procedures and the surgeon and operative room staffs need to be sensitized regarding the importance of following standard precautions⁵.

We hope that institution of easily performed safety measures and extreme vigilance may decrease mortality in these procedures which are otherwise considered to be minor.

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