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Vascular complications of CVC

Central venous catheters (CVC) are essential for hemodynamic monitoring, rapid volume resuscitation, intravenous drug therapy, chemotherapy, parenteral hyperalimentation and hemodialysis among other uses. Percutaneous puncture of the subclavian, internal jugular (IJV) or a femoral vein is the main approach to position the catheter tip in the superior/inferior vena cava. Percutaneous puncture of either veins can also accidentally puncture the nearby artery such as the subclavian, carotid or even vertebral artery. The incidence of arterial puncture during IJV cannulation is approximately 6%. As a consequence the patient can develop life threatening hemorrhage, stroke, pseudoaneurysm, arteriovenous fistula, embolism, thrombus, dissection or other compressive manifestation. Pulling a large-bore catheter from an artery and applying pressure is the general acceptable management in patients that are not anticoagulated so long as the artery is accessible to manual compression. If bleeding is not controlled by external pressure, then endovascular or surgical intervention should be considered. Surgical exploration is the safest and most conservative approach to managing arterial misplacement of catheters especially when the catheter enters the artery in a location where external compression may not be effective or if the arterial trauma occurs with a large-caliber catheter. Endovascular treatment appears to be safe for the management of arterial injuries that are difficult to expose surgically, such as those below or behind the clavicle. Stroke is a devastating symptom associated with accidental placement of the catheter in an artery usually the result of injury to a disease artery with embolization of a plaque or due to an embolizing dislodge clot. Use of ultrasound for placement of CVC reduces significantly these iatrogenic complications. Inadvertent arterial puncture rates are significantly lowered by the use of ultrasound.

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Pneumoscotum

Pneumoscotum is very rare and refers to the presence of gas within the scrotal sac of males. Pneumoscotum includes scrotal emphysema as well as pneumatocele. Scrotal emphysema is palpable and shows signs of scrotal swelling and crepitus, while pneumatocele is not palpable because the air present within the tunica vaginalis of the testis. There are three ways to explain the presence of air in the scrotum: subcutaneous or retroperitoneal air that dissects into the Dartos lining of the scrotal wall, local gas production (gas gangrene) or air introduction, and movement of air from the intraperitoneal space into the scrotum. As such the etiology of pneumoscotum can include pneumomediastinum, tension pneumothorax from thoracic trauma or spontaneous, pneumoperitoneum, Fournier gangrene, bowel perforation from instrumentation such as colonoscopy, spontaneous or sick bowel. Traumatic and iatrogenic causes accounts for most cases of pneumoscotum. Endoscopic colonic procedures and abdominal endoscopy accounts are the main causes of iatrogenic pneumoscotum. Newborns present a high incidence of pneumoscotum due to gastric and bowel perforation. Causes are various: congestion of the bowel wall secondary to asphyxia or septicemia, trauma coincident with delivery, excessive gastric acidity, direct or indirect mechanical injury from gavage tubes or resuscitation maneuver, congenital mural defects of the gastroenteric tract, meconium stasis, rupture of a diverticulum, and coincident central nervous system abnormalities. Most clinical pneumoscotum follows a benign course and can be managed conservatively with observation and antibiotics. Nonsurgical treatment is chosen because of the delayed presentation, lack of abdominal and perineal pain and clinical stability of the patient.

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Hyalinizing Trabecular Thyroid Tumor

Hyalinizing trabecular tumor (HTT) is a rare and controversial tumor of the thyroid gland with uncertain malignant potential frequently misdiagnosed and managed as other thyroid neoplasm due to the similar morphology mimicking papillary thyroid carcinoma and medullary thyroid carcinoma. Some pathologists believe that HTT is a variant of

papillary thyroid carcinoma while others believe it to be an independent neoplasm. HTT has a characteristic trabecular growth pattern and hyalinizing stroma. The overwhelming majority of HTT behaves as benign neoplasms. Malignant potential occurs when there is vascular, capsular and/or parenchymal invasion, local recurrence or distant metastasis. The problem aggravates when FNA is utilized since the features of hypercellularity and grooves, pseudoinclusions and hyperchromaticity of the nuclei which are the main diagnostic features of HTT can also be observed in patients with classic papillary carcinoma. US features of HTT are marked hypoechogenicity, absence of calcifications, parallel shape and presence of vascularity. Surgeons should be aware that the preoperative cytological or frozen section diagnosis may not necessarily agree with the final pathological diagnosis due to the overlapping nature between HTT and PTC. Frozen section is not always diagnostic of HTT. This difficulty with the pathologic diagnosis using FNA can result in overtreatment of a universally benign disease. This overtreatment can occur in 44-71% of patients harboring a HTT. HTT arises in glands that harbor chronic Hashimoto thyroiditis and multinodular goiter. Grossly HTT are well circumscribe or encapsulated with a color ranging from yellow to tan. It is recommended to perform immunohistochemical stains, at least Ki-67 and Cytokeratin-19 reaction to correctly identified HTT. The prognosis of HTT is excellent and management should consist of thyroidectomy of the affected gland lobe alone.

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