

GENERAL NEUROSURGERY

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Recovery from chronic secondary adrenal insufficiency in patients with pituitary disorders

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Background: Patients with pituitary disorders may be placed on steroid replacement for secondary adrenal insufficiency (SAI), generally after pituitary surgery; however, data regarding recovery of long-term SAI are lacking. We conducted a study to assess the longer term recovery rate of SAI in patients with pituitary disorders. **Methods:** We identified all SAI patients from prospectively entered data in the Halifax Neuropituitary Database from November 1, 2005 to September 30, 2014, who had required glucocorticoid therapy for > 3 months, and a minimum follow-up of 6 months. Exclusion: ACTH-secreting adenomas; peri-operative glucocorticoid treatment only; glucocorticoids for non-pituitary conditions. **Results:** 55 patients fulfilled the criteria, 41 (75%) of which had transsphenoidal surgery. Nine (16.4%) patients had complete recovery of SAI over a median of 20 months (range: 8 – 51). Smaller tumour size and initial cortisol > 175 nmol/L had increased likelihood of recovery; those with secondary hypogonadism or growth hormone deficiency were less likely to recover. **Conclusions:** This is the first study to examine long-term recover of SAI in patients with pituitary disorders: approximately 1 in 6 patients recover adrenal function, up to 5 years after diagnosis. Consequently, patients with SAI should undergo regular testing to prevent unnecessary chronic glucocorticoid therapy.

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A systematic review of the risks and benefits of venous thromboembolism prophylaxis in traumatic brain injury

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Background: Patients suffering from traumatic brain injury (TBI) are at increased risk of venous thromboembolism (VTE). However, initiation of chemoprophylaxis (VTEp) may cause further intracranial hemorrhage. We reviewed the literature to determine the post-injury time interval at which VTEp can be administered without risk of TBI evolution and hematoma expansion. **Methods:** MEDLINE and EMBASE databases were searched. Inclusion criteria were: studies investigating timing and safety of VTEp in TBI patients not previously on oral anticoagulation. Two investigators extracted data and graded the papers based on levels of evidence. **Results:** A total of 408 studies were screened. Forty-five studies were reviewed in-entirety and 21 were included in the systematic review. There were 2 prospective randomized trials and 19 comparative studies. Eighteen total studies demonstrated that VTEp post injury in patients with stable head computed tomography scan does not lead to TBI progression. Fourteen studies demonstrated that VTEp administration specifically

24 – 72 hours post injury is safe in patients with stable injury. Four studies suggested that administering VTEp within 24 hours of injury in patients with stable TBI does not lead to progressive ICH. **Conclusions:** Literature suggests that administering VTEp 48 hours post-injury may be safe for patients with low-hemorrhagic risk TBIs and stable injury on repeat imaging.

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Intracerebral hemorrhage secondary to multiple myeloma: a systematic review

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Background: Multiple myeloma (MM) as a cause of spontaneous intracranial hemorrhage has not been well established. **Methods:** We report a patient who developed a spontaneous intracerebral hemorrhage secondary to MM and conduct a systematic review of the literature. In addition, we discuss the underlying pathophysiology. **Results:** A 67-year-old relatively healthy female with a recent history of low back pain presented with an altered level of consciousness and left sided hemiplegia. CT demonstrated a large right temporal intracerebral hemorrhage. CT angiogram ruled out a vascular abnormality; however, multiple abnormal bony lesions were incidentally noted. Other causes for intracranial bleed were ruled out. She underwent a craniotomy for hematoma evacuation. Intra-operatively, the skull was noted to be abnormal and hematoma was not associated with a mass lesion. In addition, serum and urine electrophoresis were found to be positive for monoclonal free kappa light chains. Subsequent bone biopsy confirmed the diagnosis of MM. Our literature search identified 2 reported cases of spontaneous subdural hematomas and 2 patients with spontaneous intracerebral hematomas secondary to MM. Moreover, only 4 reports in the literature document intracranial hemorrhage secondary to a mass developed from MM. **Conclusions:** Multiple myeloma is perhaps an under-reported possible cause for spontaneous intracerebral hematoma.

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Ommaya reservoir placement for intraventricular chemotherapy: a retrospective case series in the image-guidance era

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Background: In 1963, Ayub Ommaya proposed a surgical technique for placement of a subcutaneous reservoir and pump to allow access to intraventricular cerebrospinal fluid (CSF). Currently, the most common indication for Ommaya reservoir insertion in adults is for patients with hematologic or leptomeningeal disorders who require repeated injection of chemotherapy into the CSF space. Historically, the intraventricular catheter has been inserted blindly based on anatomical landmarks. The purpose of this study was to determine short-term complication rates from Ommaya reservoir placement in the image-guidance era. **Methods:** We retrospectively evaluated all operative cases of image-guided Ommaya reservoir insertion from 2004-2014 by the senior author (JFM). Patient demographic data and peri-operative complications were collected. **Results:** We identified