6 days prior. Past medical history included hypertension, type 2 diabetes, hyperlipidemia, traumatic brain injury, CSF leak with bacterial meningitis s/p sphenoid repair and palsy of the right III,
V and VI cranial nerves. Head CT showed a 1.9 x 2.1 x 1.5 cm soft tissue-density mass medial to the right cavernous carotid artery extending into the sphenoid sinus. There was expansile bony change to the floor and right dorsum of the sella. The mass showed mild contrast enhancement and abutted the superior orbital fissure. A brain MRI was not obtained due to history of a left cochlear implant. He did not have any cushingoid features on exam. Neuro-ophthalmology exam revealed, severe sixth cranial nerve palsy, bilateral optic disc pallor and a mild right superotemporal visual field defect. Pre-operative pituitary function tests revealed ACTH 103 pg/ml (7–63), cortisol 14 ug/dl (6.0–18.4), FSH 2.7 mIU/ml (1.5–12.4), LH 3.8 mIU/ml (1.7–8.6), prolactin 17.6 ng/ml (4–15.2), total testosterone 175 ng/dl (249–836), TSH 1.10 uIU/ml (0.27–4.20), free T4 0.67ng/dl (0.8–1.8) and IGF-1 208 ng/ml (69–224). He underwent successful endoscopic trans-sphenoidal resection of a 4.2 x 2.5 x 0.5 cm mass. Pathology revealed hyaline deposits in the cytoplasm and perinuclear cytokeratin in more than 50% of the adrenocorticotroph cells consistent with Crooke's cell adenoma. Post-operatively, his right eye pain and abduction deficit improved, and diplopia returned to baseline. He was placed on a short hydrocortisone taper. Due to high risk of recurrence, he received 54Gy in 30 fractions to the sella. Six and 12-month follow-up head CTs revealed stable residual enhancing tissue. Pituitary function tests done 9 months post-surgery were normal and no hormone replacement was needed. He was clinically stable 12 months after surgery.
Conclusion: We described a rare case of invasive Crooke's cell pituitary adenoma with visual disturbances that was managed with resection and radiotherapy. The patient remained free of recurrence 1 year later. However, lifetime surveillance is necessary due to high incidence of recurrence.
Reference:
1.
Crooke's Cell Tumors of the Pituitary. Neurosurgery, Volume 76, Issue 5, May 2015, Pages 616–22

Reproductive Endocrinology

CLINICAL STUDIES IN FEMALE REPRODUCTION I

Effects of E2/P4 Oral Capsules on Bone Turnover in Women with Vasomotor Symptoms

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Menopausal hormone therapy slows bone turnover and reduces the risk of osteoporotic fractures. The objective of this post hoc analysis was to evaluate bone turnover markers (BTM) in the phase 3 REPLENISH trial, which evaluated vasomotor symptoms (VMS) with an oral estradiol/progesterone (E2/P4) in postmenopausal women with a uterus.
Eligible women for this analysis had ≥50 moderate to severe VMS/week, <5 years since last menstrual period, and BTM measurements at baseline, and months 6 and 12. Percent changes for 3 BTM (bone specific alkaline phosphatase [BSAP], C-terminal telopeptide of type I collagen [CTX-1], and N-terminal propeptide of type I procollagen [PINP]) assessed by immunoassay methods were evaluated from baseline to months 6 and 12 for the 1/100, 0.5/100 and placebo groups.
A total of 157 women (40–61 years, 69% White) were analyzed (56 for each 1/100 and 0.5/100; 45 for placebo). Mean baseline values ranged from 14.0–14.3 U/L for BSAP, 0.34–0.39 ng/mL for CTX-1, and 76.9–79.3 ng/mL for PINP. Mean differences in percent change from baseline versus placebo significantly decreased with both E2/P4 doses for all 3 BTM at months 6 and 12. Mean differences from placebo for E2/P4 at months 6/12 ranged from -8.1% to -17.8% for BSAP (all, $P \leq 0.02$), -30% to -41% for CTX-1 (all, $P \leq 0.001$), and -14% to -29% for PINP (all, $P \leq 0.007$).
REPLENISH data provide support for a potential skeletal benefit of E2/P4 when used for the treatment of moderate to severe VMS.

Bone and Mineral Metabolism

OSTEOPOROSIS: DIAGNOSIS AND CLINICAL ASPECTS

The Impact of Micronutrients on Cellular Metabolism and Healthy Aging

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Micronutrients are involved in nearly all cellular processes, inadequacies or deficiencies may accelerate cellular aging and increase risk for chronic diseases later in life.[1] Optimizing micronutrient intake may help reduce the risk for developing certain age-related conditions/diseases, including osteopenia/osteoporosis,[2] sarcopenia,[3] falls,[4] mild cognitive impairment,[5] immunosenescence,[6] impaired resilience,[7] hypertension,[8] cataracts,[9] and age-related macular degeneration.[10] The importance of calcium and vitamin D for maintaining bone health has been established,[2] but these micronutrients may also be involved with muscle health and reducing the risk for falls and consequent bone fractures in later life.[11] Vitamin D may also be involved in stress management and resilience.[12] Vitamins C, D, and E, zinc, selenium, and other micronutrients are necessary for healthy immune system function,[13,14] and vitamin E is important for cognition,[15] immune competence,[16] and eye health.[10] Although these micronutrients are individually involved with these processes by acting as antioxidants, hormonal regulators of gene expression, or cofactors in enzymatic reactions, there are also important interactions between micronutrients to consider (eg,