P-9119

How many basal cell carcinomas do you have!?-Gorlin Syndrome

Primary Author: Francis Stellaccio M.D.
SUNY @ HSC Stony Brook

Co-Authors: Joel Rowe, ;

Case

55 yo F with h/o TIA, Hodgkin’s disease, AS, non-morbid obesity, and nevoid basal cell carcinoma syndrome (NBCCS), or Gorlin syndrome, s/p L cheek Mohs surgery underwent rhomboid flap closure of a persistent 5 cm x 3 cm soft tissue defect. The pt has hundreds of globally distributed BCC nevi, most densely concentrated across the upper torso and bilateral arms (Fig. 1). She presented to dermatologic care five months prior to Mohs resection with two non-healing facial ulcers at the L nasolabial fold and the R frontal hairline. Biopsy of the NLF lesion at this time failed to reveal BCC. Treatment with topical Erivedge (vismodegib) was administered over three months before discontinuation due to intolerable side effects. Systemic and field treatments were further deferred due to pt preference. Follow-up biopsy of both facial lesions was then performed, which revealed BCC with neoplasm extending to the base of both specimens. Due to the symptomatic nature of the lesion at the NLF, including persistent bleeding, the pt elected to pursue surgical management. Flap closure was performed under general anesthesia proceeding Mohs surgery, for which intubation under general anesthesia was accomplished with the aid of video laryngoscopy. The operation was complicated by rapid development of a postoperative surgical site hematoma, resolved by emergent operative evacuation. Of note, imaging 20 months before surgery revealed dentigerous cyst formation in the area of the R sinus.

Discussion

Gorlin syndrome, or nevoid basal cell carcinoma syndrome (NBCCS), is inherited as an autosomal dominant trait with high penetrance and variable expressivity. This rare, multisystem disorder results from inactivating germline deletions on chromosome 9q22 encoding the PTCH1 (patched) membrane receptor protein of basal cells (1). As a receptor for the hedgehog (HH) signal protein, PTCH1 plays a critical regulatory role in the sonic hedgehog pathway, physiologically inhibiting downstream gene transcription through modulation of SMO (smoothened) receptor activity (Fig. 2A). This results in appropriate differentiation of embryonic cells. Inactivation of PTCH1 leads to unchecked SMO activity and resulting loss of tumor suppression function through up-regulation of GLI 1/2 proteins (Fig. 2B) (2). Pts with Gorlin syndrome can develop few to hundreds of BCC nevi due to early migration of homozygously modified fetal cells, as well as multisystem defects due to heterozygously affected cells with high probability for pathologic growth by the two hit hypothesis (3). Most commonly, abnormalities include odontogenic keratocysts of the jaw (recurrent in 90% of pts) (Fig. 3), hyperkeratosis of the palms and soles, skeletal abnormalities, intracranial ectopic calcifications (most commonly of the falx cerebri), and facial dysmorphism (5).

Conclusions
Gorlin syndrome requires careful management by surgical and anesthesia teams due to its nature as a rarely encountered multisystem disease with common maxillary and mandibular pathology that may impact pre-operative, airway, and postoperative management. Full assessment by care teams, including consideration of the use of video laryngoscopy, fiberoptic intubation (awake or asleep), or hybrid intubation technique (6), combined with awareness of syndrome presentation may minimize pt risk and maximize indicated surgical interventions.

References


