

Subgaleal Hematoma from a Carnival Costume

Eric Scheier MD¹, Tal Ben-Ami MD², Alex Guri MD³ and Uri Balla MD¹

Departments of ¹Pediatric Emergency Medicine, ²Pediatric Hematology/Oncology and ³Pediatric Infectious Disease, Kaplan Medical Center, Rehovot, Israel

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Subgaleal hematoma is most commonly found in the setting of birth trauma as well as in blunt head trauma. The bleeding can be fatal in neonates. Subgaleal hematoma has rarely been described as consequence of non-abusive pulling of the hair.

PATIENT DESCRIPTION

We report a case of a previously healthy 10-year-old girl of Ethiopian Jewish origin who presented with 5 days of headache and neck pain. On days 3 and 4 of the illness she experienced several episodes of vomiting. She denied visual change. On examination, she was febrile to 38°C by mouth with tachycardia of 104 beats per minute. Vital signs were otherwise normal. Her visual acuity score was 6/10. She had boggy tender swelling of the entire scalp and rightward torticollis. She presented with left-sided enlarged anterior cervical nodes. She had full passive range of movement of her neck. Her laboratory evaluation was unremarkable. Her complete blood count showed anemia with hemoglobin of 11 g/dl. Blood coagulation studies were normal. Computed tomography (CT) of the head without contrast showed large subgaleal hematomas of various ages, with up to 2 cm of thickness from the skull on the right and 1.5 cm on the left, without skull fracture or evidence of intracranial abnormality [Figure 1].

On further questioning, she reported that 6 days prior to presentation, when helping prepare for the Jewish festival of Purim, her aunt had used a hair straightener with force to style her hair. Further

evaluation by our child protection team did not reveal any indication of abuse. She denied easy bruising or bleeding and had previously undergone an elective tonsillectomy without complication. She was admitted for further evaluation.

During hospitalization, her head circumference remained stable and the periorbital swelling and torticollis resolved. Hematology was consulted. von Willebrand factor (VWF) factors 8, 9, 11, and 13 as well as platelet function assay were all normal. Tranexamic Acid was started on day 2 of hospitalization. On day 5 of hospitalization, she developed a fever of 39°C without any other sign of illness, and intravenous cephalexin was started without improvement in her fever. She experienced a slow decrease in hemoglobin to 7.3 g/dl over that five day period.

On day 8 of hospitalization, 250 ml of fresh and clotted blood were drained from an incision on the left side at the hairline. Cultures from the drained blood were sterile. Fluid continued to ooze from drains left in the incision site for several days. Her hemoglobin dropped during that

period to 7.1 g/dl with resting tachycardia and fatigue. She was given a transfusion packed red blood cells. She subsequently recovered and was discharged for outpatient observation after a hospitalization of almost two weeks. On outpatient follow-up, platelet function tests, clot retraction studies, and platelet aggregation tests were all normal, and her hemoglobin returned to within normal limits.

COMMENT

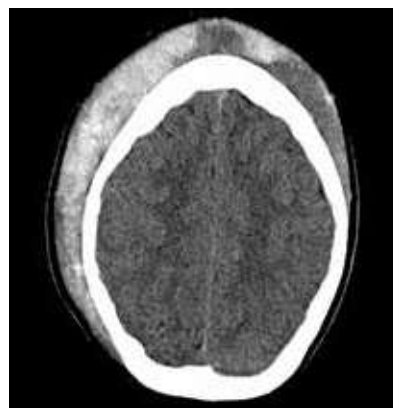
We present a case of subgaleal hematoma as a result of benign but forceful mechanical stress on the scalp, which resulted in fever in the absence of confirmed infection and significant blood loss in the absence of coagulopathy.

Our case presented with torticollis, neck pain, and enlarged cervical nodes, all of which are thought to be a result of irritation from the extension of the hematoma to the nape of the neck. She developed periorbital swelling due to the frontal extension of the hematoma. A single case of proptosis due to subgaleal hematoma has been reported in the literature [1].

Similar cases have been reported without underlying coagulopathy blunt head trauma or abuse, and several show the same pattern of hematoma on CT as in our case [2]. The prolonged time to presentation and continued slow bleeding after drainage, even under a pressure dressing, is consistent with cases in the literature cited earlier [3]. Our patient continued to experience worsening anemia, and is the only case of subgaleal hematoma resulting from non-abusive pulling of hair to require red blood cell transfusion, to the best of our knowledge.

She subsequently developed 3 days of afebrile fever. Hematoma can cause fever [4],

Figure 1. Computed tomography scan of noncontrast head at presentation showing areas of subgaleal hematoma



and although infected subgaleal hematoma has been reported [5]. One case of traumatic subgaleal hematoma in the literature does present with both fever and a significant anemia similar to that of our patient [2]. In our case, it was difficult to distinguish fever due infected hematoma from fever due to the hematoma itself as culture of the subgaleal blood was sent while already on cephalexin, and gram stain was not sent.

CONCLUSIONS

Our case is similar to other cases of subgaleal hematoma as a result of hair pulling,

including variable and possibly prolonged time to presentation, extensive blood loss, continued oozing after drainage and dressing, and fever as a result of either sterile or infected hematoma. We suggest that prolonged hospitalization is reasonable to ensure the absence of continued oozing with and without drainage, and that in the setting of fever a drained hematoma be cultured prior to starting antibiotics.

Correspondence

Dr. E. Scheier

Dept. of Pediatric Emergency Medicine, Kaplan Medical Center, Rehovot 76100, Israel
Phone: (972-8) 944-1275, **Fax:** (972-8) 944-1276
email: eric.scheier@gmail.com

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Capsule

The right presenilin for the job

The NOTCH signaling pathway is frequently mutated in T cell acute lymphoblastic leukemia. Earlier work tried to inhibit γ -secretase, a protease that cleaves NOTCH and thereby activates it. Unfortunately, nonspecific inhibition of γ -secretase is too toxic for clinical use because of on-target side effects in healthy tissues. **Habets** and colleagues discovered that

presenilin-1, a component of some γ -secretase complexes, is highly expressed in T cell leukemia relative to healthy T cells. Targeting presenilin-1 was effective and safe in mouse models, suggesting potential for translation.

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Eitan Israeli

Capsule

Targeting mosquitoes to target malaria

Anopheline mosquitoes transmit the malaria parasite, but the insects themselves are prone to their own infections. **Lovett** et al. engineered a specific fungal pathogen of anophelines to carry insect-selective toxins. The effectiveness of this fungus for controlling mosquitoes was trialed in near-field conditions in Burkina Faso in a setup called Mosquito-

Sphere. Approximately 75% of wild insecticide-resistant mosquitoes released into the environment became infected with the transgenic fungus, causing population collapse within 45 days.

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Eitan Israeli

Capsule

Illuminating intestine irradiation

High-dose radiation exposure affects multiple body systems, including the blood and the neurovascular system. Radiation can also cause severe intestinal toxicity, known as gastrointestinal syndrome (GIS). Working with mice, **Chaves-Pérez** et al. focused on the mechanisms underlying GIS. The molecular chaperone URI (unconventional prefoldin RPB5 interactor) labeled slow-cycling label-retaining (LR) cells, which are essential for organ regeneration following

ionizing radiation. Reduced URI levels rendered LR cells highly proliferative via the activation of the β -catenin/c-MYC axis. Consequently, LR cells became radiosensitive, increasing GIS severity. Thus, URI protects LR cells to promote tissue regeneration in response to high-dose irradiation.

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Eitan Israeli