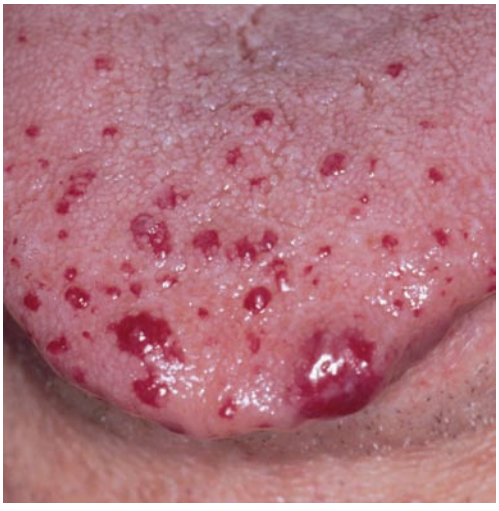
What Is Your Diagnosis?



The patient presented with a history of severe recurrent nosebleeds and a family history of cerebral abscess. His daughter experienced a brain abscess secondary to an infected arteriovenous fistula.

PLEASE TURN TO PAGE 121 FOR DISCUSSION

Dirk M. Elston, MD, Departments of Dermatology and Laboratory Medicine, Geisinger Medical Center, Danville, Pennsylvania.
The author reports no conflict of interest.
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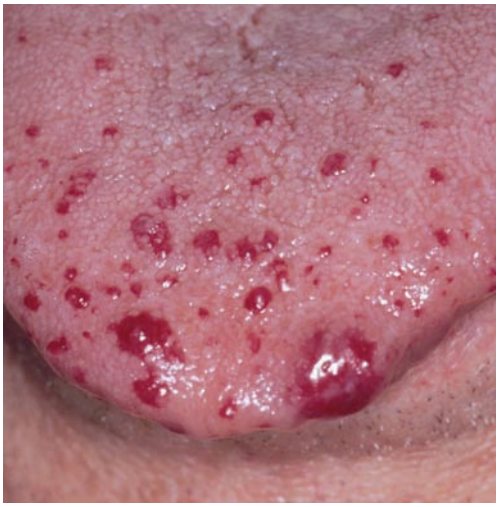
The Diagnosis: Hereditary Hemorrhagic Telangiectasia (Rendu-Osler-Weber Syndrome)



Hereditary hemorrhagic telangiectasia (HHT) is characterized by progressive telangiectasia affecting the nasal, oral, and gastrointestinal tract mucosa, as well as the skin. The syndrome is inherited as an autosomal dominant trait, with age-related penetrance. Clinical manifestations continue to develop throughout life.[1] In approximately 80% of cases, nasal bleeding is the first sign of disease.[2] Cutaneous lesions are most prominent on the digits, ears, and lips, though they may be widespread. Telangiectatic mats characteristically have individual vessels that radiate from the edge of the mat.

HHT is associated with numerous episodes of epistaxis, gastrointestinal tract bleeding, and arteriovenous malformations of the lungs, liver, and central nervous system. Coronary arteriovenous malformations also have been reported.[3] Severe complications of the disease include cerebral abscess, cerebral hemorrhage,[4] and angina. The presence of pulmonary arteriovenous malformations may increase the risk of brain abscess by allowing bacteria to bypass the filtering action of pulmonary capillaries.[5] Epilepsy also may occur as a complication of HHT.[6] Patients with HHT should be advised about antibiotic prophylaxis during minor procedures, such as dental procedures and skin surgery. Although bleeding is a potential complication during skin surgery, complex skin procedures, such as flaps and grafts, have been successfully performed in patients with HHT.[7]

Computed tomography with contrast, angiography, and color Doppler ultrasonography can be useful in the diagnosis of arteriovenous malformations.[8] Angiography with selective embolization can be a valuable diagnostic and therapeutic option in patients with severe epistaxis.[9] Because of the high incidence and potential severe complications associated with arteriovenous malformations, all patients should be screened for the presence of arteriovenous malformations and relatives should be screened for signs of the syndrome.[10] Chest radiographs may be insufficiently sensitive to screen for pulmonary arteriovenous malformations. Contrast echocardiography and pulse oximetry are more sensitive tools for screening.[11]

Most treatment recommendations are based on clinical experience rather than large controlled studies.[12] Supportive therapy should include iron supplementation to correct anemia. Cauterization, photocoagulation, embolization, and excision with grafting have been used to stop bleeding and prevent recurrences. Blood transfusions may be required during episodes of severe bleeding. Aminocaproic acid,[13] tranexamic acid, and hormonal therapy have been used to prevent mucosal bleeding.[14] Photocoagulation with a 585-nm pulsed dye laser may require several treatments before a measurable reduction in the number of bleeding episodes is achieved.[15]

Endoglin (CD105), the target gene for HHT type 1, is a cell surface component of the transforming growth factor β receptor complex.[16] Haploinsufficiency, which leads to reduced protein expression, appears to be the predominant mechanism of this autosomal dominant syndrome.[17] HHT type 1 is associated with a higher incidence of pulmonary arteriovenous malformations than HHT type 2, which is associated with activin receptor–like kinase 1 gene mutations.[18] Activin receptor–like kinase 1 is an endothelial cell receptor for the transforming growth factor β superfamily of ligands.[19] Genes for HHT may be linked to genes for familial juvenile polyposis.[20] Families with one syndrome should be screened for the other.

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