Hereditary Hemorrhagic Telangiectasia: Dermatological Features

34

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Clinical signs and features include:
- Also known as Osler-Weber-Rendu disease
- Eighty percent present as spontaneous epistaxis [1]
- Arteriovenous malformations (AVMs) occur throughout the body including the gastrointestinal (GI) tract, lungs, liver, brain/spinal cord
- Cutaneous lesions start to appear in adulthood and increase with age [1]
- Lesions appear as small macular telangiectasia that are 1–2 mm in diameter and blanch [1]
- Telangiectasia commonly occur on lips, tongue, palate, face (sun-exposed areas), nares, ears, conjunctiva, chest, hands, and feet (see Fig. 34.1) [1]
- Fingertips can develop painful ulcers from the telangiectasia

Pathogenesis of this disease involves:
- Autosomal dominant mutations: hereditary hemorrhagic telangiectasia (HHT)1, mutation in *ENG* on chromosome 9; HHT2, mutation in *ACRVL1/ALK1* on chromosome 12; HHT3, mutation on chromosome 5q; HHT4, mutation on chromosome 7p; HHT with juvenile polyposis, mutation of *SMAD4*; HHT2 with primary pulmonary hypertension, mutation of *BMPRII* on chromosome 2 [2, 3]
- Mutations lead to aberrant response to transforming growth factor beta (TGF-β) family signals for angiogenesis
- Ultimately signal errors cause blood vessels to mature inappropriately

Histopathological features include:
- Initially see dilatation post-capillary venules
- Ultimately dilated post-capillary venules enlarge and connect with arterioles eliminating capillary bed
- Vessels are often thin walled and surrounded by fibrosis
- A perivascular lymphocytic infiltrate may also be noted around involved vessels

The diagnosis is made using a combination of:
- Curaçao criteria: (1) epistaxis; (2) telangiectasias at characteristic sites; (3) visceral AVMs in GI tract/liver/lungs/brain/spinal cord; (4) family history: de novo mutation is rare and the disease has a nearly 100% penetrance by age 40 [4]
- If ≤3 of above, HHT can be diagnosed; if ≤2, HHT is suspected; if only 1, HHT is unlikely
- In children with a parent who has HHT, cannot rule out HHT until genetic tests confirm no mutation [2]
- Genetic testing reveals mutation in 80–90% of cases

The differential diagnosis should include:
- Von Willebrand disease

Treatment options include [4]:
- Mostly cosmetic for cutaneous lesions
- Long-pulsed Nd: YAG (neodymium-doped yttrium aluminum garnet) laser is effective
- Skin grafts effective for painful ulcerations on fingertips

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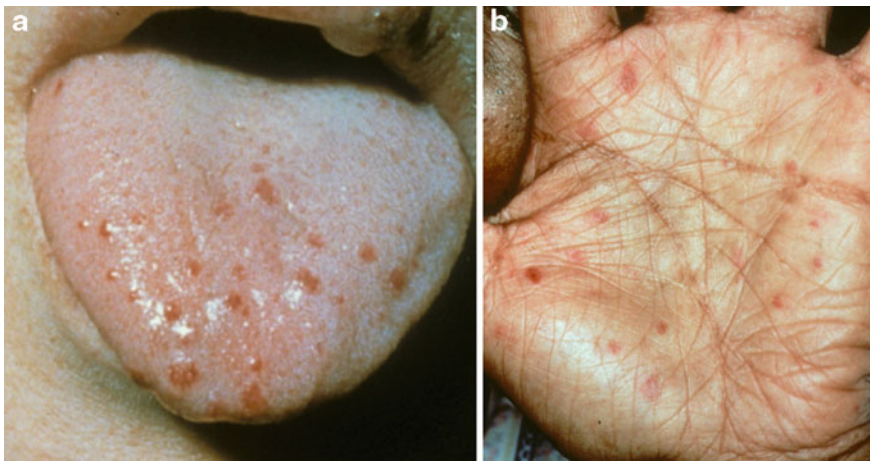

Fig. 34.1 Hereditary hemorrhagic telangiectasia. (**a**) Telangiectasia of the oral mucosa. (Image courtesy of Jeff Shornick, MD.) (**b**) Telangiectasia of the palms (Image courtesy of the New York University Image Collection)

References

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