

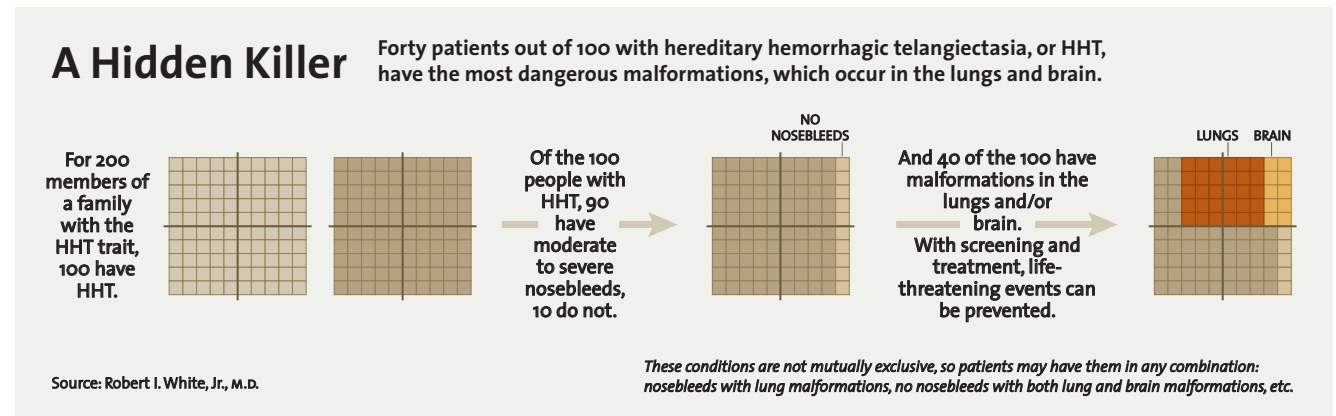
Defusing vascular “time bombs” calls for group effort

Screening, treatment model for uncommon disorder has worldwide impact

For most of us, nosebleeds are no more than an occasional nuisance, but for a million people worldwide they are a warning sign, the clearest manifestation of an uncommon and potentially fatal genetic disorder known as hereditary hemorrhagic telangiectasia (HHT).

In people with HHT—sometimes called Osler-Weber-Rendu syndrome—blood vessels in certain parts of the body tend to form without capillaries. The tiny, narrow capillaries are crucial go-betweens that depressurize blood as it flows through tissues and organs from arteries to veins. In the absence of capillaries, high-pressure arterial blood flows directly into veins with full force, creating fragile sites that are prone to ruptures and bleeding.

Small, artery-related weak spots in small vessels, such as those inside the nose or at the surface of the skin, are known as telangiectases. Defects in the larger blood vessels of the gastrointestinal tract, liver, lungs and brain are called arteriovenous malformations, or AVMs. For many people with HHT, recurrent nosebleeds caused by ruptured nasal telangiectases—which occur in 90 percent of cases—are the only medical consequence of the disorder. But 10 percent of those with HHT also have AVMs in the lungs or brain; these malformations usually have no symp-



toms and can cause stroke or sudden death if they rupture.

According to Robert I. White Jr., M.D., professor of diagnostic radiology, there are straightforward and highly effective therapies for the life-threatening AVMs seen in HHT. But far too often, he says, a widespread lack of knowledge of the disorder, even among physicians, means that recurrent nosebleeds can be ignored or misdiagnosed, needlessly turning easily treatable AVMs into “vascular time bombs.”

“Why isn’t this well-known?” asks White. “Because HHT affects five organs, and each specialist takes care of their organ, and doesn’t know anything about the other organs.”

But White is spreading the word. For more than two decades, in conjunction with the Hereditary Hemorrhagic Telangiectasia Foundation International, an organization he helped to found in 1991, White has been a globetrotting evangelist for HHT screening and treatment, and he

has guided the creation of Centers of Excellence across the United States and in Europe and Japan. These centers, each based on a successful model for HHT management that White pioneered at Yale, give patients access to multidisciplinary clinical teams—otolaryngologists, dermatologists, neurologists, gastroenterologists, pulmonologists and radiologists—whose overlapping clinical expertise embraces all the organ systems affected by HHT, along with genetic counseling and specialized nursing services.

At Yale, patients who believe they may have HHT are given MRI scans to screen for brain AVMs and contrast echocardiography (commonly known as a “bubble test”) to search for vascular malformations in the lungs. Because any child of a parent with HHT has a 50 percent chance of inheriting the disorder, patients are urged to refer members of their extended family to screening and treatment centers.

If AVMs are found, they can be treated with embolization, a procedure in which doctors guided by ultrasound, X-ray or MRI images thread a catheter through veins to the malformation and shut off its blood supply with platinum coils or a medical-grade “Super Glue.”

In addition to White, members of the Yale HHT team include Douglas A. Ross, M.D., associate professor of surgery (otolaryngology); Guadalupe Garcia-Tsao, M.D., professor of medicine (digestive diseases); Lawrence H. Young, M.D., professor of medicine (cardiology); Deborah D. Proctor, M.D., associate professor of medicine (digestive diseases); Jeffrey S. Pollak, M.D., associate professor of diagnostic radiology; Katharine J. Henderson, M.D., genetic counselor; and Cinda J. D’Addio, senior administrative assistant.

“We work together, and we all gain something from it,” says White, “so it’s the ideal multidisciplinary collaboration.”