Onimoe G, Grooms L, Perdue K, Ruymann F. Acquired von Willebrand


eComment. Doctor Jekyll and Mr Heyde: a vague association between angiodysplasia and aortic stenosis

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Patients with aortic stenosis have increased risk of bleeding, including gastrointestinal bleeds secondary to angiodysplasia. Heyde syndrome is a triad of aortic stenosis (AS), acquired coagulopathy and anaemia due to bleeding from intestinal angiodysplasia [1]. Increased breakdown of the large von Willebrand factor (vWF) molecule by ADAMTS13 under conditions of high shear stress around the valve is the speculated pathophysiologic mechanism of Heyde syndrome. Although it has been reported on repeatedly, little is known about this syndrome.

In their recent article, Loeffelbein et al. analyzed the structure and function of vWF in children with stenotic congenital heart disease before and after intervention. Despite of the demonstration of acquired von Willebrand syndrome (AWWS), excessive surgical site bleeding was not found due to shear stress around stenotic valves [1], which is consistent with the inherent form of von Willebrand disease. This finding sheds light on some pathophysiological controversies about Heyde syndrome.

Two main theories explain the association between aortic stenosis and angiodysplasia [3]. According to the degenerative theory, age-related processes play a major role in the development of gastrointestinal (GI) angiodysplasia as well as calcifying AS and connects these two disorders. The hypoaxemic theory suggests that narrowed aortic valve decreases perfusion in the GI tract, causes hypoaxemia and is the main reason for persistent vasodilatation in GI mucosa resulting in angiodysplasia. There are methodological difficulties in proving statistical or causal links between aortic stenosis and intestinal angiodysplasia, partly because both conditions are common in the elderly population. But the present study can be regarded as being in favour of the degenerative theory that patients with aortic stenosis have an increased bleeding tendency, leading to the identification of angiodysplasia. This pediatric study is very valuable because it gives us geriatric clues about Heyde syndrome.

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References