Origin of Kehr Sign in Traumatic Splenic Trauma

Sir,

We read with interest the case by Hashmi *et al*. of delayed splenic rupture caused by minor trauma and aim to clarify misconceptions regarding Kehr sign.[1] The authors used the term "Kehr's sign" presumably in reference to hyperesthesia or pain referred to the posterior or superior left shoulder caused by blood accumulation under the left hemidiaphragm in splenic rupture or contusion. Klimpel, in a review of the literature, found a lack of compelling evidence that this sign should be attributed to Johannes Otto Kehr (1862–1916).[2]

In Kehr's discussion on splenic rupture in Handbuch der praktischen Chirurgie, he stated that:

> "There is no pathognomonic symptom for injuries to the spleen. In contusion, pain and enlargement of the spleen are typical symptoms. When rupture occurs, all the other signs and symptoms of internal bleeding are less important. In subcutaneous injury, the affected person usually experiences pain, initially on the left side, quickly spreading to involve the entire abdomen. The signs of collapse (pronounced pallor, weak pulse, feeling cold and fainting) appear. In rare cases, the injured person does not experience anything from splenic rupture, and collapse may not be present. Left shoulder pain is not common. Other manifestations involve the lungs, heart, and larynx (hoarse voice up to complete lack of voice). The latter indicates an alteration of the vagus, involving the splenic plexus through the semilunar ganglion".[3]

Levy referenced Kehr's publication on splenic injuries and left shoulder pain symptoms and presented the case of a 29-year old man with internal haemorrhage secondary to splenic injury and severe left shoulder pain, emphasising its diagnostic significance.[4]

Saegesser noted that phrenic nerve tenderness is found regularly in splenic rupture and subcapsular haematoma.[5] He described the method for eliciting this symptom as "The examination is performed by applying pressure with the thumb of the right hand from behind on the left side of the neck between the sternocleidomastoid and anterior scalene muscles and in the direction of the larynx and spine. As a control, the phrenic nerve pressure pain on the right side is checked with the same hand movement. If it is clearly detectable on the left, and together with the local findings, the assumption of a splenic injury can be assumed".[5]

Confirmed is the origin of Kehr sign and the appropriate attribution to it. Both Kehr and Saegesser signs are bedside tools that may assist in diagnosing splenic rupture.

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The authors declared no competing interest.

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AUTHOR'S REPLY

The misconceptions about the Kehr's sign are rightly explained in the letter to the editor. Both Kehr's and Segessor's signs are clinical methods specifically attributed to splenic injury. The clinicians must bear in mind that the absence of these signs

should not make them doubt their clinical judgment and complete reliance on clinical signs can result in delayed diagnosis, which can be disastrous for the patient.

Patients of blunt abdominal trauma and splenic injury should be managed according to the set guidelines. Only the gold standard investigations can put light on the nature and severity of injuries. Kehr's sign can be elicited in some patients but it has little practical application.

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