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Accessory spleen and its significance: A case report

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Abstract

The spleen forms from multiple small components during embryogenesis, and failure of this fusion can lead to one or more nodules remaining separate. Accessory spleen can be congenital or it can be acquired. An accessory spleen/splenunculi is a small congenital nodule of splenic tissue which is located apart from the main splenic body. It is usually asymptomatic but might present clinically as an abdominal mass related to complications such as torsion, spontaneous rupture, haemorrhage and cyst formation. Splenunculi are typically few centimetres in diameter when identified, well circumscribed rounded or ovoid nodules. An accessory spleen was found in the Gastrosplenic ligament in a male cadaver during routine dissection in the year 2014-15. They are medically significant in that they may result in interpretational errors in diagnostic imaging or continued symptoms after therapeutic splenectomy.

Keywords: Accessory Spleen, Gastrosplenic ligament, Splenectomy.

1. Introduction

An accessory spleen (*supernumerary spleen, splenule, or splenunculus*) is a small nodule of splenic tissue found apart from the main body of the spleen. Accessory spleens are found in approximately 10 percent of the population and are typically around 1 centimeter in diameter [1]. Accessory spleens result from the failure in fifth week of fetal life of groups of mesodermal cells in dorso mesogastrium [2]. The most common locations for accessory spleens are at the hilum of the spleen and adjacent to the tail of pancreas but they may be found anywhere along the splenic vessels, in the gastrosplenic ligament, in the lienorenal ligament, the walls of the stomach or intestines, the pancreatic tail [3], the greater omentum, the mesentery or the gonads and their path of descent [4]. Morphologically and functionally they are similar to the normal spleen and receive their vascular supply from branches of splenic artery [5, 6].

The identification of an accessory spleen is important because it may mimic lymphadenopathy or a tumor in the pancreas, adrenal gland or kidney. It can also cause symptoms due to torsion, haemorrhage, spontaneous rupture or cyst formation [7]. It is important for the surgeons to recognise accessory spleens at the time of splenectomy because if they are left behind they will undergo hyperplasia and can cause recurrence of the disease [8]. Accessory spleen and splenic lobulations can be misinterpreted as neoplasm by endoscopic ultrasound. Although homogenous they can be hyperechoic or hypoechoic. Their sharp regular outer margin and anatomic location may help to avoid misdiagnosis [9].

Case report: During routine cadaveric dissection for undergraduate medical students in the Department Of Anatomy, Dr. S.N. Medical College, Jodhpur in batch 2014-15, We came across an accessory spleen in an embalmed male cadaver of approximately 60 years of age. It was present in the gastrosplenic ligament and was round in shape.



Fig 1 & 2: Showing AS-accessory spleen, S-spleen, SA-splenic artery.

2. Result

The length was 2.5cm and breadth was 3 cm. in measurement. It was similar in texture and color to the main spleen and was receiving blood supply from small branches of splenic artery.

3. Discussion

The spleen consists of a large encapsulated mass of vascular and lymphoid tissue situated in the upper left quadrant of the abdominal cavity between the fundus of the stomach and the diaphragm [10]. It contacts the posterior wall of the stomach and is connected to the greater curvature by the gastrosplenic ligament and to the left kidney by the splenorenal ligament [11]. The spleen appears at approximately the sixth week of the intrauterine life as a localized thickening of the coelomic epithelium of the dorsal mesogastrium near its cranial end. The proliferating cells invade the underlying simultaneously mesenchyme, which becomes condensed and vascularized. The process occurs simultaneously in several adjoining areas, which soon fuse to form a lobulated spleen. In the subsequent periods of the embryonic life, the earlier lobulated character of the spleen disappears but is indicated by the presence of notches on its upper border in the adult. The spleen can display various developmental anomalies, including complete agenesis, multiple spleens or polysplenia, isolated additional splenunculi and persistent lobulation [10]. Ectopic splenic tissue can be found in body in two distinct types: accessory spleen and splenosis. Accessory spleens are congenital and arise from the left side of the dorsal mesogastrium during the embryological period of development [12]. They can be solitary or multiple but are seldom more than six [5]. Characteristically, they are smooth with a round or oval shape and are about 1.0-1.5cm.in diameter [13]. In 85% of the cases there is one accessory spleen, in 14% there are two, in 1% three or more accessory spleens have been found. Splenosis, on the other hand is an acquired condition which occurs when the splenic tissue is autotransplanted through surgical intervention or traumatic rupture of spleen having incidence of 67% in these patients. It presents as numerous nodules (as many as 400) in any

intra-peritoneal or extra-peritoneal location. Splenosis nodules receive their blood supply from newly formed arteries penetrating the capsule [12].

Histologically it is possible to differentiate accessory spleen from splenosis. Accessory spleens have well defined capsule, hilum, trabeculae, white pulp with malpighian follicles having central arteriole and red pulp. Splenosis nodules are also surrounded by capsule but malpighian follicles and central arteriole are not formed [8]. An accessory spleen is approximately 1cm in diameter but vary from microscopic deposits which are not visible on CT to 2-3 cm in diameter [11].

An accessory spleen or splenosis is an important cause of recurrence in diseases in which splenectomy is curative, such as chronic immune thrombocytopenic purpura (crITP) and hereditary spherocytosis (HS) [14]. Indeed, removal of the accessory spleen or spleen fragments is therapeutic for these diseases [15]. In addition, splenosis may cause severe symptoms depending on the site of implantation [16, 17, 18]. Splenosis may also be asymptomatic. However, when incidentally detected using radiologic methods, accessory spleen/splenosis may require differential diagnosis with recurrence or metastases in patients with malignancies [19, 20, 21]. Accessory spleens that cannot be removed at the time of the initial splenectomy and splenosis may also be atypically located. Therefore, it is important to identify these tissues and establish an appropriate differential diagnosis.

4. Conclusion

Accessory spleens are usually incidentally detected and asymptomatic, but in case of unexpected locations, accessory spleen can be of clinical importance. At times, an unexpected location of an accessory spleen can be misinterpreted as a metastatic lymph node. Knowledge of variational anatomy of spleen is of fundamental importance to surgeons while they perform surgical operations which are related to the spleen, to the radiologists during diagnostic procedures to prevent interpretational errors in diagnostic imaging and very important for anatomists during routine cadaveric dissections.

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