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Exploring the Clinical Significance of Accessory Spleens Through Cadaveric Studies: Implications for Diagnosis and Management

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ABSTRACT
An accessory spleen, also known as a supernumerary spleen, splenule, is a small nodule of splenic tissue that is found apart from the main body of the spleen. It is typically a congenital condition present in approximately 10% of the population resulting from the failure of fusion of splenic tissue during development. These can be located close to the hilum of the spleen (the area where blood vessels enter and exit), the greater omentum (a fatty tissue layer in the abdomen), or the tail of the pancreas. The present study was done on 60 adult cadaveric spleens obtained from routine dissections and out of which we got 2 accessory spleens. In clinical practice, the awareness of accessory spleens and careful evaluation of imaging studies, as well as consideration of their presence during surgical procedures, can help prevent misdiagnosis, ensure appropriate treatment plans and avoid potential complications.

INTRODUCTION

An accessory spleen is a common congenital anomaly which is found in approximately 10% of the normal population at autopsy[1]. The most common cause of their formation is an incomplete fusion of mesenchymal buds and trauma. An accessory spleen may be pulled by splenic ligaments to ectopic locations. They are always located on the left side of the abdomen due to rotation of the spleen during embryogenesis. Morphologically and functionally, they are like the normal spleen and receive their vascular supply from branches of splenic artery[2,3].

The common location for accessory spleen is hilum of spleen and adjacent to tail of pancreas. They may be present anywhere along splenic vessels, in gastrosplenic ligament, lienorenal ligament, the walls of stomach and intestine, pancreatic tail. Size of accessory spleen ranging from 1-3 cm[4].

The identification of an accessory spleen is important because it may mimic lymphadenopathy or a tumor in the pancreas, adrenal gland, or kidney. In addition, it can occasionally cause symptoms due to torsion, hemorrhage, spontaneous rupture, or cyst formation[5] It is important for the surgeons to recognize accessory spleens at the time of splenectomy because if they are left behind, they will undergo hyperplasia and cause recurrence of disease[6]. Accessory spleen and splenic lobulation can be misinterpreted as neoplasm by endoscopic ultrasound[7].

MATERIALS AND METHODS

Present study was done in 60 adult human cadaveric spleens, which were obtained from routine dissection and previous dissections over a span of 6 years in a Tertiary Medical College of Rajasthan.

RESULTS

Out of 60 spleens, we found 2 accessory spleen near its hilum of in gastrosplenic ligament (Fig. 1 and 2). Both were confirmed by histologic examination (Fig. 3). Total incidence of accessory spleens in our study is 3.33%.

DISCUSSIONS

Accessory spleen is one of developmental anomaly of spleen, other anomalies include complete agenesis, polysplenia, an isolated small additional accessory spleen, a persistent lobulation[8]. 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 dorsal mesogastrium during the embryological period of development. In 85% of cases there is one accessory spleen, in 14% there are two, in 1% three or more accessory spleens

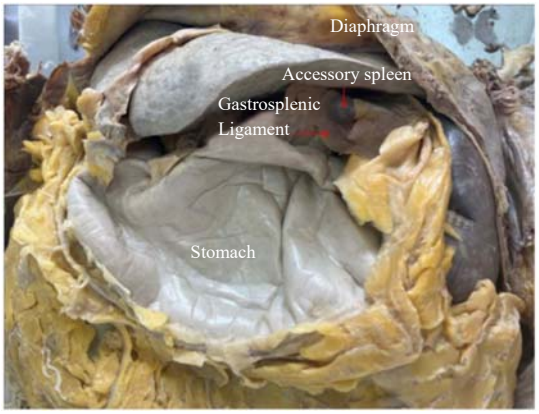

Fig. 1: Location within the peritoneal cavity

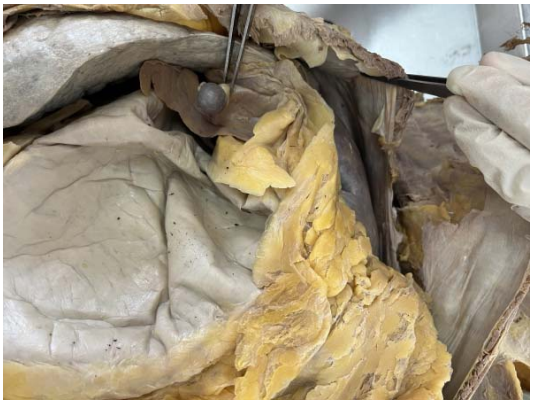

Fig. 2: Accessory spleen

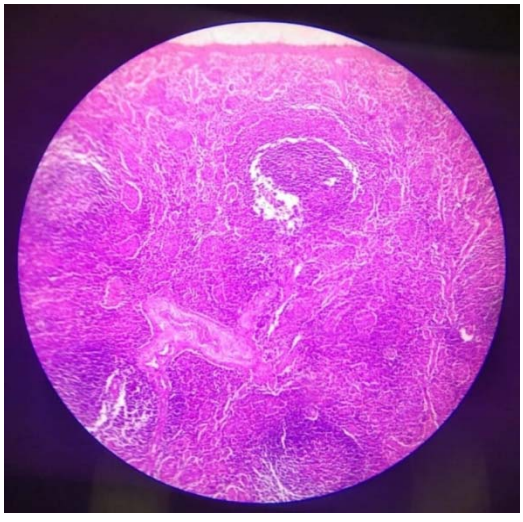

Fig. 3: Histology of accessory spleen

have been found. Splenosis, on the other hand is an acquired condition which occurs when the splenic tissue is auto transplanted 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 intraperitoneal or extraperitoneal location. Splenosis nodules receive their blood supply from newly formed arteries penetrating the capsule[9].

Accessory spleen occurs in 10% of people about 1 cm in diameter and are usually isolated but connected to spleen by thin bands of splenic tissue. Intrapancreatic accessory spleen reported by Zavras *et al*.[10]. Splenic pseudotumor in accessory spleen reported by Ota *et al*.[11] in annals of nuclear medicine. Wandering accessory spleen reported by Erden *et al*.[12] in ultrasound examination.

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. Most of the accessory spleens are asymptomatic and are discovered incidentally by abdominal ultrasound, CT scan or laparotomy during the investigation of some other problem. Rarely do they become symptomatic due to complications such as torsion with infarction, rupture, or infection[6].

CONCLUSION

The presence of an accessory spleen can be medically significant for following reasons: Interpretation errors in diagnostic imaging: Accessory spleens can be mistaken for other abnormalities or tumors during imaging studies such as ultrasound, CT scans, or MRI. This misinterpretation can lead to diagnostic errors and unnecessary interventions. Persistence of symptoms after splenectomy: In cases where a person has undergone splenectomy (removal of the spleen), an undetected or residual accessory spleen can cause the continuation of symptoms. This can occur if the accessory spleen was not identified and removed during the initial surgery. These symptoms may include recurrent or persistent pain, anemia, or other complications related to the spleen's normal functions.

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