

ORIGINAL ARTICLE

## Accessory Spleen A Rare Finding: A Cadaveric Study

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### ABSTRACT

*The accessory spleen is rarely present in the human body. If present it is present in the gastrosplenic ligament or in the tail of pancreas. Mostly it is reported by radiologists, through MRI or ultrasonography. Accessory spleen has no clinical consequence unless a patient suffers from a haematological disease like idiopathic thrombocytopenic purpura. In some haematological diseases in which the spleen is to be removed but after removal of spleen the sign and symptoms occur. This recurrence is due to the presence of accessory spleen. In the present study the accessory spleen was found while doing routine the dissection of abdomen. In the present study 20 human cadavers were dissected which were embalmed with 10% formalin and fixed. The aim of our study is highlight the presence of accessory spleen in the body and importance in the human body and to compare the study with studies done by other authors. This study will be helpful for the surgeons and physicians in their diagnosis and treatment.*

**Key words:-** Abdomen, omentum, mesentery, pancreas, spleen, gonads, mass, viscera, ligament, haematological diseases.

### INTRODUCTION

The spleen is a soft, freely movable organ of purplish colour, situated far back in the upper left part of the abdomen, behind the stomach. Its size varies greatly during life. The position of the spleen varies with the excursions of the diaphragm and also with the state of adjacent viscera and posture. The shape of the spleen is influenced largely by the stomach and left colic flexure. The spleen is having two ends (anterior and posterior), two borders (superior and inferior), and two principal surfaces i.e. diaphragmatic and visceral. Small rounded accessory spleens are often present on the gastrosplenic ligament (Walls, 1995). The spleen mainly lies in the left hypochondrium of the abdomen. It is situated between the gastric fundus and diaphragm. Its long axis lies in the plane of the 10<sup>th</sup> rib, its posterior border lies at the level of the 10<sup>th</sup> thoracic spine and its anterior border reaching the mid-axillary line. It is soft friable, highly vascular and of a dark purple in colour. The splenic tissue may occur within gastrosplenic ligament and greater omentum. Such splenic tissues may be rounded body. These are called accessory spleen or spleniculi. These may be numerous and widely scattered in the abdomen (Standerling, 2008). Accessory spleens themselves have no clinical consequence unless a patient suffers from a disease like idiopathic thrombocytopenic purpura. However, as they are commonly mistaken for tumours, patient undergo needless operations for removing the lesion. Consequently, it is important to accurately differentiate an accessory spleen from other pancreatic lesions requiring more aggressive treatment (Kim et al, 2008).

### MATERIAL AND METHOD

The present study will be conducted in the Department of Anatomy of Maharishi Markandeshwar Medical College, Kumarhatti, and District: Solan (Himachal Pradesh). 20 cadavers which are embalmed with 10% formalin and fixed will be the material for the study. The abdomen will be opened according to Cunningham's Manual of Practical Anatomy (2013). The omentum, mesentery, peritoneum, pancreas, ligaments around spleen and stomach will be examined to look for any extra tissue present in all these sites. Their site and size of the tissue will be recorded and photographed. Histological examination of the

tissue will be done to confirm the nature of tissue. The present study will be compared with the standard studies and also with studies done by other authors.

## RESULTS

The present study is concluded in the Department of Anatomy of Maharishi Markandeshwar Medical College, Kumarhatti, and District: Solan (Himachal Pradesh) India. The dissection of abdomen of 20 human cadavers was done which were embalmed with 10% formalin and fixed. The abdomen was opened and examined the greater omentum, small intestine, large intestine, mesentery, transverse mesocolon and viscera, like liver, kidney, pancreas and spleen.

A rounded mass was found which was lying in the gastrosplenic ligament near the tail of pancreas and in the hilum of spleen. It was cherry brown in colour and its size was 22 mm × 18 mm. A branch of splenic artery was supplying to this mass. It was taken out and the slides were prepared for histopathological examination to identify the tissue (Photograph - I and II).



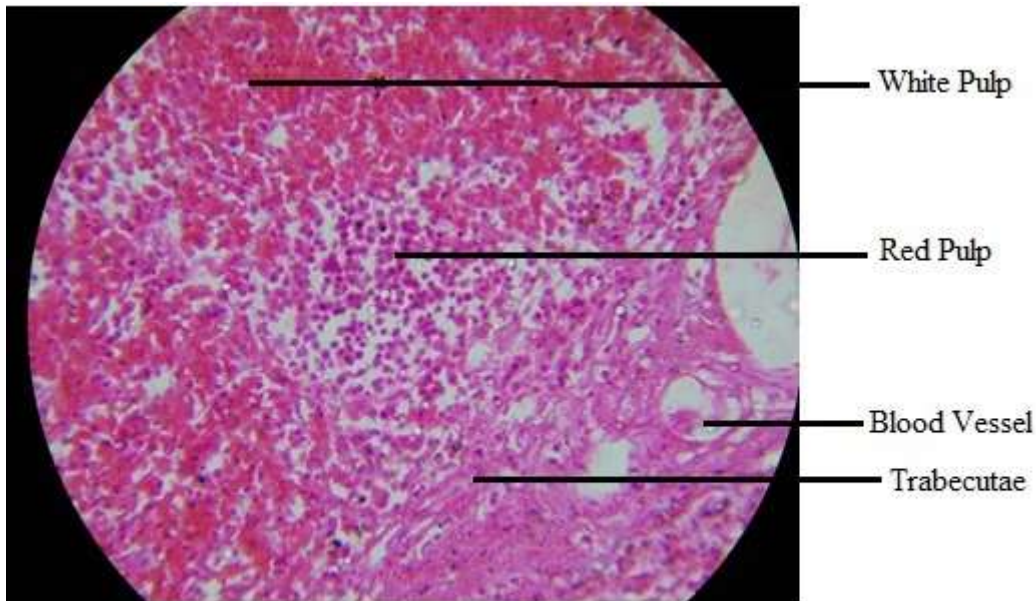
Photograph - I



Photograph - II: Accessory Spleen

### Histopathology of the mass:-

In the histological examination it was found that the tissue in slide was identical to the spleen. It was not having any pathological finding. It was having clear splenic parenchyma (Photograph - III).



**Histological structure of Tissue**

**Photograph - III**

In the present study the mass found in (5 %) of cases present in the abdomen near the hilum spleen and in the tail of pancreas, it was histologically confirmed that the mass found was accessory spleen because tissue present in the mass resembled with the histological picture of spleen.

#### **DISCUSSION**

Spencer et al. (2010) described that the accessory spleen is a congenital anomaly found in approximately 10% of the population, with only one out of six cases occurring in the pancreatic tail. Halpert and Gyorkey (1959) studied autopsy of 3000 patients, an intrapancreatic accessory spleen was found in 17% of patients who were identified with accessory spleen. It was told that it was a benign asymptomatic finding. The most common locations for accessory spleens are the hilum of spleen and adjacent to the tail of the pancreas. They may be found anywhere along the splenic vessels, in the gastrosplenic ligament, the lenorenal ligament, the walls of the stomach or intestine, the pancreatic tail (Kim et al. 2008). The accessory spleen can be present in the greater omentum, the mesentery or gonads and their path of descent (Chen et al. 2008).

The detection and characterization of accessory spleens are important for clinical scenarios. It may be mimic lymphadenopathy and tumours in the pancreas, adrenal gland and kidney (Seo et al. 1994). Accessory spleens may become symptomatic, because of torsion, spontaneous rupture, hemorrhage and cyst formation (Hayward et al. 1992). Surgeon's awareness of their presence may be important when the intention is to remove all functional splenic tissues in case of hematologic disorders (Facon et al. 1992).

An accessory spleen (supernumerary spleen, splenule or splunule) is a small nodule of splenic tissue found apart from the main body of the spleen. The accessory spleens are found in approximately 10% of the population (Moore 1992) and are typically around 1 cm. in diameter. They form either by the result of developmental anomalies or trauma. They are medically significant in that they may result in interpretation errors in diagnostic image or continued symptoms after therapeutic splenectomy (Gayer-2001).

In the present study the mass found present in the abdomen near the hilum of spleen and tail of pancreas, it was having the tissue which was resembling with the tissue of spleen which was confirmed by the histopathological examination of tissue. With the comparison of the other studies done by other authors who wrote that such like mass was found in many cases, they confirmed and wrote that the mass found by them, was having splenic tissue, so they called it as the accessory spleen. In the present study it is found in 5% of cases only, whereas Halpert and Gyorkey (1959) 17% of cases reported by them, Moore (1992) reported that 10% of population is having accessory spleen. Spencer et al. (2010) also reported that 10% of population may have the accessory spleen.

## CONCLUSION

Accessory spleen is the rare finding which can be present in the hilum of spleen, gastrosplenic ligament, mesentery, intestine, and/or near the gonads. This rare finding never produce any sign or symptom but in some patients which are suffering from a disease like idiopathic thrombocytopenic purpura, hypertrophic spleen and when splenectomy is performed for hypersplenism, hypertrophy of an accessory spleen may cause recurrence of the disease. Sometimes the mass is considered as a tumour. The surgeons and physicians should keep in mind the knowledge of presence of accessory spleen before the removal of spleen for the purpose treatment of haematologic disease.

## REFERENCES

1. Walls, EW. Cunningham's Text Book of Anatomy. Reprinted 12<sup>th</sup> edition. Chapter-13. The blood vascular and lymphatic system, spleen. Oxford University press. Oxford, New York and Toronto. (1995); page: 1005 – 1006.
2. Standering, S. Gray's Anatomy. The Anatomical Basis of Clinical Practice.40<sup>th</sup> edition. Chapter posterior abdominal wall and retroperitoneum, spleen. Churchill Livingstone Elsevier, London (UK) (2008); page: 1191, 1218.
3. Kim, SH; Lee, JM; Han, JK; Lee, JY; Kim, KW; Cho, KC; Choi BI. Intrapancreatic accessory spleen: finding on MR Imaging, CT, US and Scintigraphy and the pathologic analysis. Korean J Radiol (2008); 9: 162 – 174.
4. Romanes, GJ. Cunningham's Manual of Practical Anatomy.15<sup>th</sup> edition. The Abdominal cavity, the spleen. Oxford University Press. Oxford, New York, Tokyo (2013); page: 113 - 171.
5. Spencer, LA; Spizarny, DL; Williams, TR. Imaging features of intrapancreatic accessory spleen. Br J Radiol (2010); 83 (992): 668 – 673.
6. Halpert, B. and Gyorkey, F. Lesions observed in accessory spleen of 311 patients. J Clin Pathol (1959); 32: 165 – 168.
7. Chen, SL; Kao, YL; Sun, HS; Lin, WL. "Splenogonadal Fusion". J Formosan Medical Association (2008); 107 (11): 892 – 895.
8. Shioka, A; Mizuno, M; Watanabe, S; Seki, M; et al. Intrapancreatic Accessory Spleen Diagnosed Technetium -99 mm Heat Damaged Red Blood Cell SPECT. J Nucl Med (1997); 38: 494 – 495.
9. Seo, T; Ito, T; Watanabe, Y; Umeda, T. Torsion of an accessory spleen presenting as an acute abdomen with an inflammatory mass: US, CT, and MRI findings. Pediatr radio (1994); 24: 532 – 534.
10. Hayward, I; Mindelzun, RE; Jeffrey, RB. Intrapanceatic accessory spleen mimicking pancreatic mass on CT. J comput Assist Tomogr (1992); 984 – 985.
11. Fecon, T; Caulier, MT; Fenaux, P; et al. Accessory spleen in recurrent chronic immune thrombocytopenic purpura. Am J Hematol (1992); 41: 184 – 189.
12. Moore, KL. Clinically Oriented Anatomy 3<sup>rd</sup> edition. Baltimore: Williams and wilkings (1992); page: 187.
13. Gayer, G; Zissin, R; Apter, S; Ater, E; Portnoy, O; Itzchak, Y. CT findings in congenital anomalies of the spleen. Br J Radiol (2001); 74: 767 – 772.

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