

**Case Report**

## MULTIPLE NOTCHES AND FISSURES IN THE UPPER BORDER OF SPLEEN – A CASE REPORT

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### ABSTRACT

The objective of the present study is to report a case of splenomegaly with multiple notches and fissures on its upper border. This study was done at Department of Anatomy, Mysore Medical College, Mysore, India during July 2014. The spleen was grossly enlarged. There were multiple notches and fissures on the superior border. The hilum was curvilinear. This variant made us interesting to study. Hence studied and reported. This enlarged spleen having multiple notches and fissures was well compared and correlated with available literature. This variation in the spleen is of morphological and embryological importance. This variation should be known to anatomists, clinicians and radiologists. This variation can be mistaken for laceration of the organ. Hence studied and reported.

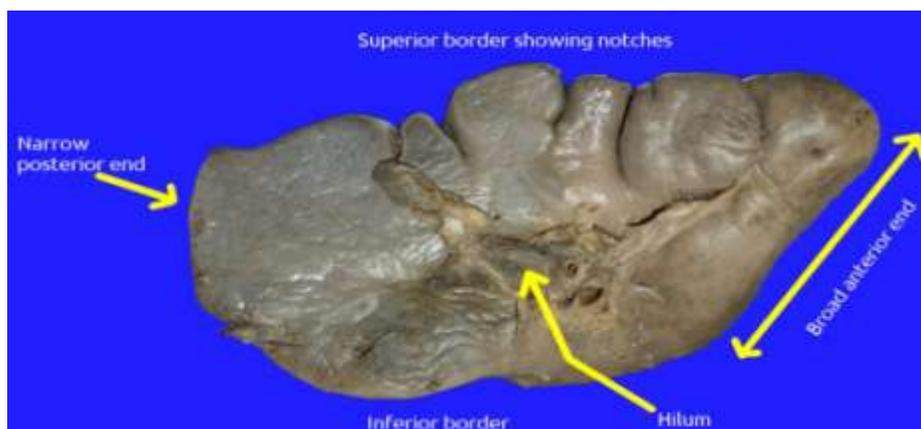
**Keywords:** Hilum, Superior Border, Spleen, Splenomegaly

### INTRODUCTION

Spleen is highly vascular. It is the largest lymphoid organ (Kato *et al.*, 2007). Spleen is concerned with circulatory and lymphoid system. It performs both hematological as well as immunological functions. It has two surfaces namely diaphragmatic and visceral surfaces and three borders namely superior, intermediate and inferior border and four impressions namely gastric impression, renal impression, colic impression, pancreatic impression. Spleen shows one or two notches on superior border (Borley, 2008; Coetzee, 1982; Kato *et al.*, 2007; Skandalakes, 2004). Animals like lion, wild dog, domestic dog and fox have notches on the all borders (Parsons, 1901; Skandalakes, 2004).

### CASES

An enlarged spleen was noticed incidentally with multiple notches and deep fissures in the department of anatomy at Government Medical College, Mysore during the first year M.B.B.S student's examinations. It was enlarged in size. It is 5cm thick, 9cm broad and 13.8cm long. The length of the hilum was 4.8cm. All the visceral impressions were large. 5 fissures and 6 lobes were present on the superior border. The depths of fissures were 2.8cm, 1.9cm, 1.4cm, 1.2cm and 1.1cm. Hilum was not straight but it was curvilinear.



**Figure 1**

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#### DISCUSSION

The most common anomalies of spleen are lobulation of spleen, accessory spleen (10-30% incidence) duplication and displacement, wandering spleen (Kardel *et al.*, 1971; Rosenberg *et al.*, 1991). Gayer *et al.*, (2006) has reported that in addition to the main organ, presence of accessory spleen in the different quadrants of abdomen is the most common anomaly (Gayer *et al.*, 2006). Kusum R. Gandhi has reported from a female cadaver aged 32 years after autopsy has been done in the department of forensic medicine at Rural Medical College, PIMS, Maharashtra, which showed six notches on its superior border, one notch was present at the anterior end and a fissure 2.8 cm long was present at the renal impression (Gandhi *et al.*, 2013). Muktyaz *et al.*, (2013) did a study on variations of spleen in department of anatomy, at Government Medical College, Ambedkar Nagar, Uttar Pradesh, India and SRMS Institute of Medical Sciences, Bareilly, Uttar Pradesh, India. Out of 32 spleens studied, 13 spleens (40.6%) showed variations. Multiple notches on the superior border occur in 9.3% of spleens. Notches on the inferior border occur in 12.5%. Notches on the intermediate border occur in 6.2%. Two spleens had shape similar to liver (6.2%) (Hussein *et al.*, 2013). Nayak *et al.*, (2011) has come across splenic notches on the superior border only in 50% of cases (Nayak *et al.*, 2011). The splenic notches were observed on superior borders in studies of Skandalakes *et al.*, (78.6%), Soyluolu *et al.*, (70%), Ungör *et al.*, (95%) (Das *et al.*, 2008; Gayer *et al.*, 2006; Skandalakis, 2004). Das *et al.*, (2008) did a study on 100 spleens. They found in 98% notches were present only on the superior border in 1% notches were present only on the inferior border, and in 1% notches were present on both superior and inferior borders (Das *et al.*, 2008).

#### Present Study

A single spleen was studied which was enlarged and all the impressions were large and deeply concave. The superior border shows 4 notches 3 were deep and one was shallow. Hilum of spleen was not well made out, but on close examination, it was curvilinear.

There were no notches on the inferior border and intermediate border. Anterior end was sharp with one shallow notch. There were no lobulations. No lacerations present. The surface was smooth and even.

#### Conclusion

This study on multiple notches of spleen will be of great help to the surgeons and to the radiologists through images. These notches are commonly mistaken for lacerations of the spleen. So it has paramount clinical significance.

#### Take Home Message

This study tells about the presence of multiple notches and fissures on the superior border which is a morphological variant. This variant is commonly mistaken for laceration of the organ and is also useful for radiologists to rule out laceration or tear of the organ. Hence this study is important to clinicians, radiologists and anatomists.

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