

INCIDENTAL FINDING OF ABSENT TWELFTH RIB IN A HEALTHY FEMALE

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Dear Sir,

The incidence of congenital rib absence is not well undocumented and sporadic cases have been reported.^{1,2} Variations in the number of ribs in apparently healthy individuals can range from supernumerary (more) to subnumerary (fewer).^{3,4} A 36 year female patient presented with the history of road traffic accident. There was no history of loss of consciousness, vomiting, seizures, ear, nasal or throat bleed. The patient was complaining of chest pain. Her general, systemic and neurological examination was normal. CT scan brain was normal. Her chest x-ray showed absence of left twelfth rib (Fig. 1). The patient treated conservatively for traumatic brain injury and recovered well.



Figure 1: X-ray chest showing congenital absence of left 12th rib (arrow)

Absence of the rib may be a result of agenesis of one of the pairs or the 12th during embryological development.⁵ It has been proposed that it may be due to insufficient local blood-supply resulting in

rib dysplasia during the embryonic period.⁶ Most defects of the ribs involve parasternal part and involvement of the lower ribs (between 6 and 12) is commoner¹ and occurs in 5%-8% of normal individuals.⁶ Developmental rib abnormalities may be isolated or occur in association with other congenital anomalies.⁶ Abnormal number of ribs can be associated with many congenital anomalies including trisomy 21,^{3,7,8} trisomy 13,⁹ Pierre Robin syndrome,¹⁰ cleidocranial dysplasia and campomelic dysplasia,^{6,11} and myelomeningocele.¹² The single rib absence without significant clinical symptom can be managed conservatively, however, when there is absence of several ribs and there are clinical symptoms than the condition may need appropriate surgical intervention.¹ Prognosis is good if associated malformations are absent and the treatment carried out at an earlier age.¹ Although simple congenital absence of rib can be an incidental finding on imaging,¹³ however the absence of rib can be clinically significant when the surgical approach is planned to the kidney, during diagnostic and therapeutic lumbar punctures, counting of ribs during heart examinations and drainage of the thorax.¹

References

1. Mehta M, Patel R, Mehta L, Bhatt Y. Congenital absence of ribs. *Indian pediatrics* 1992; **29**: 1149.
2. Singh M, Rao K, Bala I, Mitra S. Pectus excavatum. *Indian pediatrics* 1989; **26**: 410.

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3. Ochieng J, Ibingira C. Sternal anomalies with supernumerary and subnumerary vertebrae and ribs-case reports. *East and Central African Journal of Surgery* 2007; **12**: 99-104.
4. Sadler TW. *Langman's medical embryology*: LWW, 2011.
5. McVay CB, Anson BJ. *Anson & McVay surgical anatomy*: Saunders, 1984.
6. Glass RBJ, Norton KI, Mitre SA, Kang E. Pediatric Ribs: A Spectrum of Abnormalities1. *Radiographics* 2002; **22**: 87-104.
7. Esser T, Rogalla P, Sarioglu N, Kalache K. Three-dimensional ultrasonographic demonstration of agenesis of the 12th rib in a fetus with trisomy 21. *Ultrasound in obstetrics & gynecology* 2006; **27**: 714-5.
8. Beber BA, Litt RE, Altman DH. A new radiographic finding in mongolism. *Radiology* 1966; **86**: 332-3.
9. Pettersen JC, Koltis GG, White MJ. An examination of the spectrum of anatomic defects and variations found in eight cases of trisomy 13. *American journal of medical genetics* 1979; **3**: 183-210.
10. Nicholls S, Fletcher E. Congenital rib defects with the Pierre Robin syndrome. *Pediatric radiology* 1973; **1**: 246-7.
11. Edwards D, Berry C, Hilton S. Trisomy 21 in newborn infants: chest radiographic diagnosis. *Radiology* 1988; **167**: 317-8.
12. Wells TR, Jacobs RA, Senac MO, Landing BH. Incidence of short trachea in patients with myelomeningocele. *Pediatric Neurology* 1990; **6**: 109-11.
13. Pionnier R, Depraz A. Congenital rib abnormalities; statistical study of 10,000 radiographs]. *Radiologia clinica* 1956; **25**: 170.