

Original Research Article

A Study of Double Foramen Transversarium in Dried Cervical Vertebra

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ABSTRACT

Objectives: The aim of the present study is to know the incidence of double foramen transversarium in the dried cervical vertebra and its morphological importance.

Methods: A total number of 100 dried cervical vertebrae were collected from the department of anatomy to investigate the double foramen transversarium. The occurrence of double foramina was observed on both sides.

Results: In the present study out of 100 cervical vertebrae, noticed double foramen transversarium in 3 (3%) vertebrae, among them double foramen seen unilaterally in 2 (2%) vertebrae and bilaterally in 1(1%) vertebra.

Conclusion: In the present study observed Unilateral double foramen transversarium was more common than bilateral. This anatomical knowledge is clinically important since the course of the vertebral artery may be distorted in such situations. This study may useful to neurosurgeons and radiologists.

Keywords: Cervical vertebra, Vertebral artery, Foramen transversarium.

INTRODUCTION

The foramen transversarium of cervical vertebra is a result of the special formation of the cervical transverse processes. It is formed by the costal element fused to the body and the true transverse process of the vertebra. The foramen transversarium transmit the vertebral artery, vertebral veins and sympathetic nerves.^[1] An accessory transverse foramen is seen smaller in size than the primary foramen and generally found in the sixth cervical vertebra, and less frequently in the adjacent

vertebrae.^[2] Double foramen transversarium is a rare anatomical variation and this may affect the course of the vertebral artery and may be distorted.

MATERIALS & METHODS

The present study was conducted in the department of anatomy, Bhaskar Medical College, Yenkapally, Moinabad, Ranga Reddy District, Andhra Pradesh. A total number of 100 dried cervical vertebrae were collected for this study. All the collected cervical vertebrae were examined

macroscopically for the existence of the double foramen transversarium on both sides.

RESULTS

In the present study out of 100 dried cervical vertebrae, the incidence of double foramen transversarium is (3%). We have observed double foramen transversarium in 3 cervical vertebrae total. Bilateral double

foramen was seen in 1 vertebra (1%) (FIGURE: 01) and unilateral double foramen transversarium was seen in 2 vertebra (2%), one on right side (FIGURE: 02) and another one on left side (FIGURE: 03) transverse process of vertebra. So in the present study unilateral incidence of double foramen transversarium was more than bilateral one.



FIGURE: 01: Bilateral double foramen transversaria.



FIGURE: 02: Right Unilateral double foramen transversaria.



FIGURE: 03: Left Unilateral double foramen transversaria.

DISCUSSION

Pretty Rathnakar et al (2013)^[3] reported, the incidence of double foramen transversarium as a total of 5.7% (unilateral 3.6%, bilateral 1.42%) out of 140 vertebrae. Laxmi Chandravadiya et al (2013)^[4]

reported, the incidence was 4.76% total (unilateral 3.80%, bilateral 0.95%) out of 140 vertebrae. Archana Sharma et al (2010)^[5] reported double foramen transversarium both unilaterally and bilaterally in 16 vertebra out of 200 typical cervical vertebra. B.V. Murlimanju et al (2010)^[6] reported, the incidence was 6 (1.6%) out of 363 vertebra, among them double foramina seen 5 (1.4%), three foramina were seen in 1 (0.3%) and bilateral on only 1(0.3%), unilateral 5 (1.4%) (4 on right side and only 1 on left side). Taitz C et al (1978)^[7] reported double foramen transversarium in 34 vertebra out of 480. Shaarawy et al (2010)^[8] observed that, the occurrence of double foramina transversaria were most common at the lower cervical vertebra level (C5, C6 and C7) and frequently seen in C6 vertebra. Seventh

cervical vertebra shows the maximum variability in foramen transversarium among cervical vertebra.^[9] The anatomy and morphology of double foramen transversarium is helpful to the radiologists and spine surgeons in the interpretation of radiographic films and CT scans. Maintaining the vertebral artery intact constitutes an important concern during cervical surgical procedures.^[10]

CONCLUSION

In the present study we observed 3 out of 100 cervical vertebrae consist of double foramen transversaria and the incidence was 3%. A unilateral existence of double foramen was more common than bilateral. This study may important for radiologists and spine surgeons during cervical procedures.

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