Persistent Bilateral Sciatic Artery: A Rare Discovery at Alfaisal University

INTERNATIONAL JOURNAL OF ANGIOLOGY

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INTRODUCTION

The persistent sciatic artery is a rare presence which has been found bilaterally in a female cadaver during routine dissection at Alfaisail University. This artery usually degenerates by the 3rd month in utero, along with the appearance of the femoral artery as an extension of the external iliac artery. As shown in **FIGURE1**, during fetal development, the lower limbs are supplied by the axial artery. In some rare cases, the axial artery persists and becomes the main blood supply to the posterior compartment of the thigh, replacing the profunda femoris artery which is commonly known as the persistent sciatic artery (PSA).

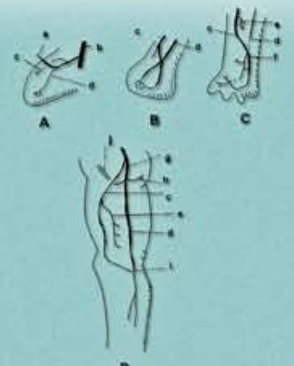

FIGURE1: Schematic representation of the development of arteries of the thigh in order to show the formation of the persistent sciatic artery. A. In the 10-mm human embryo; B. In the 14-mm human embryo; C. In the 22-mm human embryo; D. Persistence of the sciatic artery in the adult. a — umbilical artery, b — aorta, c — femoral artery, d — sciatic artery, — deep femoral artery, f — popliteal artery, g — internal iliac artery, h — inferior glutealartery, i — popliteal artery, j — obliterated umbilical artery'.

METHOD

On a routine dissection conducted by the first year medical students, the presence of bilateral PSA in a female body was found, **FIGURE2-A**. This finding has provided evidence that this artery runs with the sciatic nerve supplying the posterior aspect of the thigh and finally joins the popliteal artery near the knee. Whilst the presence of a unilateral PSA is uncommon, a bilateral PSA is extremely rare[2,3].

RESULTS

The clinical significance of the bilateral PSA results from the relatively superficial position of the artery that may potentially subject it to trauma. Further clinical complications, such as aneurysms and blood clots may arise[1].

FIGURE2-A: Persistent Bilateral Sciatic Arteries and Sciatic Nerves

FIGURE2-B: Left Persistent Sciatic Arterie

ASSOCIATED FINDINGS

The profunda femoris artery was completely absent bilaterally In addition, bilateral PSA was accompanied by abdominal aortic and left subclavian aneurysms **FIGURES3 and 4**, respectively and a hypoplastic spleen **FIGURE5**, and a left subclavian artery aneurysm. Our findings indicate that this is the first report of such structural abnormalities associated with bilateral PSA.

FIGURE3: Abdominal Aortic Aneurysm (AAA)

FIGURE4: Left Subclavian Aneurysm

FIGURE5: Hypoplastic Spleen

CLINICAL IMPORTANCE

The present discovery by the students serves as an effective teaching tool linking embryology, anatomy and pathophysiology of the vascular system. In addition, this knowledge could benefit the students in their clinical years, as their awareness of vascular anomalies has been increased.

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ACKNOWLEDGEMENTS

We would like to thank Dr. Paul Ganguly and Ms. Michèle Cowan for their tremendous help. Without them this discovery would not have been possible. Our appreciation goes to the College of Medicine and the organizing committee at Alfaisal University. Special thanks to the editors of the international journal of Angiology for accepting our abstract as well as inviting the research team to present their findings in the next annual congress at the University of Kentucky.