

Exploring the Significance of the Internal Iliac Artery: Anatomy, Clinical Implications, and Therapeutic Considerations

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ABSTRACT

The internal iliac artery, also known as the hypogastric artery, is a major branch of the common iliac artery and plays a crucial role in the blood supply to the pelvis and its surrounding structures. This mini review provides an

overview of the anatomy, function, and clinical significance of the internal iliac artery. The article discusses its branching pattern, distribution, and collateral circulation, as well as its role in various surgical procedures and potential clinical complications. Understanding the internal iliac artery is essential for healthcare professionals involved in the diagnosis and management of pelvic disorders, vascular interventions, and surgical procedures in the pelvic region.

Key Words: *Internal iliac artery; Hypogastric artery; Anatomy; Function; Clinical significance*

INTRODUCTION

The internal iliac artery, one of the major arteries of the pelvis, arises bilaterally from the common iliac artery and supplies blood to the pelvic organs, pelvic walls, and gluteal region. It has a complex branching pattern and provides critical vascular support to various anatomical structures in the pelvis. The knowledge of its anatomy, function, and clinical significance is crucial for healthcare professionals involved in the management of pelvic disorders, vascular interventions, and surgical procedures in the pelvic region [1]. This mini review aims to provide an overview of the internal iliac artery, its branching pattern, distribution, collateral circulation, and its importance in clinical practice.

Anatomy and Branching Pattern: The internal iliac artery originates at the level of the sacroiliac joint, where the common iliac artery bifurcates into its two major branches: the external iliac artery and the internal iliac artery. The internal iliac artery descends into the true pelvis, giving off various branches along its course. Although the branching pattern may vary, the general branches of the internal iliac artery include the following:

- Anterior Division:** a. Umbilical artery (obliterated in adults) b. Superior vesical artery c. Inferior vesical artery (in males) or vaginal artery (in females) d. Uterine artery (in females) or middle rectal artery (in males) e. Obturator artery f. Inferior gluteal artery
- Posterior Division:** a. Iliolumbar artery b. Lateral sacral artery c. Superior gluteal artery

The branches of the internal iliac artery supply blood to a wide range of structures, including the urinary bladder, rectum, uterus, vagina, gluteal region, pelvic walls, and pelvic viscera [2].

Function and Clinical Significance: The internal iliac artery plays a critical role in the vascular supply of the pelvic organs and structures. Its branches provide oxygenated blood to the bladder, rectum, uterus, vagina, and pelvic walls, ensuring their proper function. Additionally, the internal iliac artery participates in collateral circulation, which becomes essential in case of occlusion or stenosis of other arteries in the pelvis [3-4].

The clinical significance of the internal iliac artery extends to various medical and surgical disciplines. In gynecology, the uterine artery, a branch of the internal iliac artery, is crucial for maintaining the blood supply to the uterus and is commonly ligated during surgical procedures such as hysterectomy or myomectomy. In urology, the inferior vesical artery (in males) and vaginal artery (in females) are important in the blood supply to the respective organs and are considered during surgical interventions [5-7].

In interventional radiology, the internal iliac artery can be selectively

catheterized to perform angiographic procedures or embolization for the treatment of various pelvic pathologies, such as pelvic bleeding, arteriovenous malformations, or tumors [8]. The knowledge of the internal iliac artery and its variations is essential for successful and safe interventional procedures in the pelvis [9].

Complications related to the internal iliac artery can also arise during surgery or vascular interventions. Injury to the internal iliac artery or its branches may result in severe hemorrhage, leading to significant morbidity and mortality. Surgeons must be aware of the anatomy and variations of the internal iliac artery to prevent iatrogenic damage during pelvic surgeries [10].

CONCLUSION

The internal iliac artery is a vital vessel that provides blood supply to the pelvis and its surrounding structures. Understanding its anatomy, function, and clinical significance is essential for healthcare professionals involved in the diagnosis and management of pelvic disorders, vascular interventions, and surgical procedures in the pelvic region. The knowledge of the internal iliac artery's branching pattern, distribution, collateral circulation, and clinical implications is crucial for optimizing patient care and preventing potential complications associated with the pelvis and its related pathologies.

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CONFLICT OF INTEREST

None.

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