

MORPHOLOGICAL STUDY OF THE NUTRITIONAL VASCULARIZATION FOR THE INFERIOR ADRENAL GLAND

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Abstract: *The source of the information for curative medicine is and will be anatomy. In the specialized literature, which is very rich, the inferior adrenal arteries show high interest for surgeons. How they vary depending on the origin- the most important, than the path, mode of termination, offer some extremely dense and indispensable facts. This research is based on the study of these arteries and their variants in order to complete the amount of information already known.*

Key words: *inferior adrenal arteries, adrenal glands.*

1. Introduction

Anatomy has been and will remain the foundation from which all other areas of medicine are based. Using actual data through anatomy, medicine is healing. But the macroscopic and microscopic data found in a compelling rich heritage are waiting to be taken for a spiritual profit. Adrenal glands have always put some issues related to structural and functional organization. In this study we are focusing on the importance given by these arteries from the adrenal glands. In particular, lower adrenal artery provides a wide field of studying with its options regarding the origin, trajectory, mode of branching and termination. Thus we chose the lower adrenal artery, the artery that takes the blood into the gland.

2. Material and Method

The study was performed on 63 lower adrenal arteries derived either from human

fetuses or from adult cadavers, kidney or organic blocks.

Dissection methods were used, such as contrast agent injection, radiography and photography, plastic injection followed by corrosion. Dissection was used as the classical method.

For injection of contrast substance we used barium sulfate. Plastic injection was made with polyvinyl chloride and cyclohexanone as solvents. Corrosion technique was followed by sodium hydroxide and then with water.

We focused on the paths from the origin to the end of the glandular parenchyma, vessel size and the origin for the inferior adrenal artery.

3. Results

The inferior adrenal artery is a main artery and it is considered voluminous. In 44 cases of 63, 19 left inferior suprarenal artery and 25 right inferior have had the renal artery as origin. (see Fig.1)

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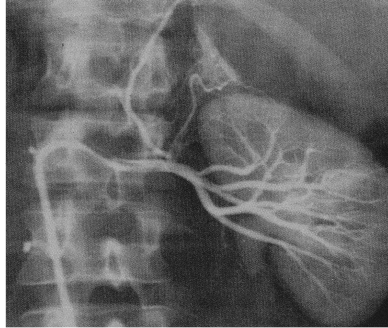


Fig. 1. *The renal artery as the origin point for the inferior adrenal artery*

The remaining 30% of cases, had the abdominal aorta as origin point for the inferior adrenal arteries. They also have a superior pole branch artery to the kidney (see Fig. 2).

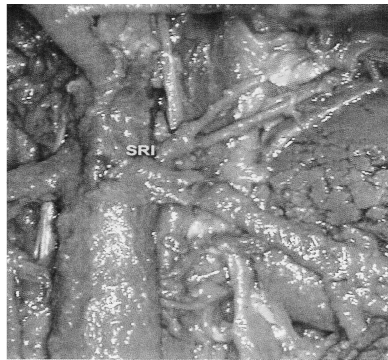


Fig. 2. *Abdominal aorta as origin point for the inferior adrenal artery*

For the cases in which the lower adrenal artery found its origin in the renal artery, we can talk about the renal artery trunk found most often to the right of the inferior adrenal artery. The size of the inferior adrenal artery is large enough if it has its direct origin from the aorta and in these cases is called the main inferior adrenal artery. Its length is similar to that of the underlying renal artery. When the origin of the inferior adrenal artery is from the renal artery, the size is also large (but smaller than the one that has the origin in the aorta). The length varies depending on the remoteness of the origin from the renal artery trunk compared to the remoteness from the aorta.

The angle and the path of the inferior adrenal artery also take account of the origin point. If the origin is at the aorta, the artery in question has an angle similar to the angle of the renal artery and the origin and path is oblique in a supero-lateral direction. If the origin is at the renal artery trunk, the angle depends on the proximity of the kidney and the artery approaches a vertical position when the separation is close to the kidney. Separation in the terminal branches is done by forking in two or three branches but there are also rare cases with multiple terminal arteries.

3. Conclusions

The inferior adrenal artery is indispensable and it represents the main source of vascularization for the adrenal gland.

The arterial trunk of this artery is well defined; The origin of this artery is the renal artery - in most cases and the aorta. Size, angle, trajectory and relationships are set by the lower adrenal artery origin.

Termination is inside the adrenal gland for some cases, or near the adrenal for most cases. Separation in the terminal branches is done by forking in two or three branches. Inferior adrenal arteries show a high variability.

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