UNIVERSITY "OVIDIUS" CONSTANŢA
FACULTY OF MEDICINE DOCTORAL SCHOOL

MORPHOLOGY OF INTERNAL ILIAC VESSELS

THESIS SUMMARY

SCIENTIFIC COORDINATOR:
PROF.UNIV.DR. BORDEI PETRU

***PHD*:**
TIRON (POPA) OANA

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Contents

INTRODUCTION

Internal Iliac Veins are massive branches which carry the blood to viscera and pelvic cavity walls, to the external genital organs, perineum, to the gluteal, obturator and medial regions of the hip and the perineum. Thus results their importance in the context of some circulatory disorders that can happen at those levels. The medical-surgical pathology of these veins is quite complex, for they can shelter frequently atherosclerosis, compression and stenosis, aneurism or breakdown of the iliac veins (especially the artery), more frequently at the over 50 years old people. The importance of the Iliac Veins stands not only in the abdominal-pelvium vascular pathology, but also in the vascular pathology of the leg, being the agent that will reinsure the circuit of blood by means of the anastomosis they present in its collateral branches.

Therefore, Kodja underlines the important and direct role of the Internal Iliac Artery in the prevention of colon's and pelvium's ischemia, in revasculation, in the reconstruction of aorta.

Lindebaum underlines the importance of the ipsi and counter lateral anastomosis in the Artery reconstruction. Stoelk indicates the bilateral ligature of the Uterine Artery and the Ovarian Artery as means of controlling the pelvises hemorrhagic. Wothington and Martin recommend embolization of the Uterine Artery for the treatment of fibroid uterus, and Nasu states the importance of the collaterals that are settled in carcinomas for the pelvises circulation.

Hashemi pointed out the the importance of the internal Iliac artery in the alternate circulation of the leg, in the aortic-femoral restauration, with a special emphasy upon the superior gluteal artery and the pudental interior artery, which establish anastomosis with the iliofemural system.

The obliteration of the whole iliac shaft gives birth to lower limb vascularization disorders, which will be vascularized by the parietal branches of the internal iliac artery. When the obstruction affects these branches too, with poor vascular compensation, lower mezenteric artery can occur through plexus rectal and urogenital (Becade), and Pillet says that when the Internal Iliac Artery is obstructed, the

revascularisation process depends upon the internal iliac Artery branches, obturator and lower gluteal, and also on the profound femoral artery and the anastomosis between the upper gluteal and lower gluteal artery, which was also mentioned by Chermet. Akinwande underlines that the pelvic collateral system has a major importance in the aortoiliac occlusion.

The part the internal iliac artery and its branches have manifests itself mainly in the abdominal aortic aneurysm. Gupta and Mori underlined the importance of the permeable iliac vessels for this pathology. Soulen recommends embolization of the internal iliac artery in aortic aneurysm.

Picel shows the importance of the aortic bifurcation angle, of the common iliac artery track (rectilinear or sinuos), the aneurysm can be of right interest for the external iliac artery and femoral artery. Melas states the isolated aneurysm located on the internal iliac artery is rare, and if the intervention is not fast enough, the rapture and existus is forecoming. Despite this, Mehta describes the bilateral internal iliac artery aneurysm, and Kabutey recommends trans gluteal embolism in this type of percutaneous bilateral aneurysm, by direct access through the superior gluteal artery.

Taking into account the frequency of the vascular pathology of the iliac system, Criadi recommends a sharp and precise knowledge of the anatomy of this system, and Hardman underlines the embryological development of this.

The venous iliac system is frequently involved also in vascular pathology pelvic and lower limb, Raju showing the importance of the venous iliac in venous obstruction of the lower limb, requiring stenting, Calista placing over 200 stents iliocave (stent iliac controlled) thrombosis iliofemoral (positioning the stent at the junction iliocava) and Ye K compression placing stents iliocava 227 no thrombotic. Cho first recommended drug treatment for the iliofemoral venous thrombosis. Hyo -Sung recommends the same thing unless satisfactory results are obtained to appeal to the catheter. Vogel is committed to endovenectomy on the common femoral vein altogether with endoluminal recanalization of iliocava in patients with post-thrombotic iliofemoral obstruction.

Cohen stated that venous thromboembolism (VTE) may be asymptomatic, therefore can frequently lead to death. Perhaps the most interesting pathological pelvic venous system is represented by the May- Thurner syndrome, which is a pulsatile compression of the

left common iliac vein of the right common iliac artery which passes above the vein. The syndrome was described in 1965 (after Chermet, who calls syndrome Crocket) and after Budnur in 1908 by McMurrich, his name being given by May and Thurner in 1956, compression of iliac vein left common being found at about 50 % of patients with left common iliac vein thrombosis, compression for them being be up to 50 % (Budnur). Fretz recommended the stent as treatment, and the same treatmentas for the May- Thurner syndrome is also recommended by Jong- Youn.

All this shows that it is very important to understand the morphology of the iliac vessels, in particular the origin and their variants morphometric (size, length), which also being the most common cases, constituting the reason why I chose the topic of my thesis of PhD.

In the chapter " The current state of knowledge ", the anatomy of internal iliac vessels was drafted having the skeleton anatomy of Paturet, one of the most complete and best organized on anatomy of existing ones, to which I added concepts and existing treaties of Testut,, Gray, Rouvière and from Romanian authors (Papilian, Iancu, Chiriac) and also more recent systematiations from Chevrel,, Kamina and articles in various specialized publications, many of them quite recent.. For the Iliac Veins, the treaty of formed the basis of the anatomy of their overall presentation, plus the additions of Rouvière, Gray, Chevrel, Kamina and Romanian authors mentioned and also mentions from appeared medicines journals.

The personal part begins with the presentation material and working methods, listing the benchmarks tracked and presentation number of cases to which I worked, recorded and listed in conclusive tables.

Below are the obtained results, referring first to the internal iliac artery' morphology and afterwards to the results of the internal iliac vein morphology. The origin of the internal iliac artery was studied in relation to the completion of backbone and homologous veins, both arteries and veins, monitored parameters being studied by gender and compared right / left. Morphometric of the two vessels was also studied in relation to sex and compared right / left and morphometric compared to common and external iliac vessels. The results were compared with existing results in the literature that I had the opportunity to consult, as evidenced by graphs and tables conclusive and especially by the suggestive images.

Part of the personal results were exploited by a scientific summary published in abstracts of scientific event in question and by the publication of two papers " in full " Ars Medica Tomitana magazine, journal indexed Scopus and BDI.

The general bibliography contains over 170 titles that we were able to consult, which shows that the morphology of the iliac vessels Internal is quite frequently debated by specialists, especially in their involvement in the pathology and the treatment of these diseases, but less regarding normal morphology and variations of these vessels.

I thank our colleagues from the Department of Anatomy, especially DR. Bulbuc Ionut, Ionescu Constantin, Adriana Iordan, whose help I received in solving problems for carrying out this work.

I thank professor univ.dr. Bordei Petru,scientific coordinator of my thesis from whose guidance I received over the four years that I realized this thesis.

PERSONAL CONTRIBUTION

MATHERIAL AND METHODS

My study of the iliac vessels was conducted on a numberr 317 cases, of which 56 human cadaveric dissection on Formalinized and fresh adults and fetal; 31 plastic injection followed by dissection or corrosion; 42 Dopler ultrasound; 62 simple angiographies and 126 angioCT (2D and 3D reconstructions) From all these, internal iliac vessels could be watched on a number of 294 cases, of which 54 dissections, 26 plastic injection, 42 scans, 58 angiographies and 114 simple angioCT. Internal iliac arteries were studied in a larger number of cases than veins, the number is as follows: 54 dissections, 26 plastic injections, ultrasound Doppler 18 (the same number as in the arteries).

Internal iliac veins were studied in a total of 122 cases, 50 cases dissected, ultrasounds were 24 cases, 22 cavografescases and 26 cases angioCT. I had no case of plastic injection in the iliac vein.

At the arteries level I followed the origin of the internal iliac arteries as compared with the backbone and the ending of the homonymous vein and the angle that they make with the external iliac artery bifurcation of the common iliac artery appropriate. It was also noted the angle the internal iliac artery makes at its origins with the common iliac artery from which it arises. From the morphometric point of view it was observed the caliber of the internal iliac artery at its origins and arterial trunk length until the issuance of the first ram collateral. The size of the arterial caliber was compared with the calibre of the iliac arteries, common and external.

At the level of internal iliac vein I followed: their origin and the termination (the placeof confluation with the correspondent external iliac vein), the finishing point was recorded as compared to the origin of the homonymous artery and with the backbone, also mentioning the level of forming the iliac vein as compared to the backbone.The angles between the internal iliac vein at its finish, altogether with external iliac veins and common iliac veins were measured. In terms of morphometric, the calibre of internal iliac vein was set at its origin and termination, as compared to common and external iliac veins caliber,

as well as with the internal iliac vein calibre on the opposite side. The length was measured from the last ends in this tributary to the level of common iliac vein formation.

To be noted that not all morphological markers could be studed on the same number of cases and by all methods, each pursued landmark being described in a number of cases and in certain characteristic way of working. All morphological parts were studied as compared to left vs rightand in relation to the sex of the individual, but only in the arteries level.

For plastic injection we used Technovit7143, of German production, and we obtained very good results, Technovit having a number of advantages over other plastics used in intravascular injection. Corrosion I did it from the beginning with sodium hydroxide to produce a rapid corrosion and good quality. Scans Doppler color was performed on a device GE Voluson E8 Expert, angiography simple and cavographies that we have studied are part of the collection of the Anatomy Laboratory of the Faculty of Medicine and angioCT sites that I had the opportunity to examine were executed in brain imaging center Pozimed GE LightSpeed CT on VCT64 Slice CT and exploration Medimar center of the Emergency Hospital in Constanta, being executed GE LightSpeed CT on 16 Slice CT.

PERSONAL RESULTS AND DISCUSSIONS

ORIGIN OF THE INTERNAL ILIAC ARTERY

The level of origin of the internal iliac arteries was studied on a number of 133 cases, of which 85 cases were represented by angioCT (63.91 % of cases), 29 cases dissected (21.80 % of cases) and 19 plastic injection cases, followed by dissection (14.29 % of cases).

Fig. 10. The right internal iliac artery originates above - located to the left internal iliac artery origin.

Fig. 11.. The two internal iliac arteries originate at the same level.

Taking into account the cases I have studied, the origin of the left iliac artery was higher -lying than the iliac artery origin in 58 patients (43.61 % of cases), and in 54 cases the origin of the iliac artery being located above the iliac artery to the origin left (40.60 % of cases). In 21 cases (15.79 % of the cases), the two internal iliac arteries originated from its corresponding common iliac artery located at the same level.

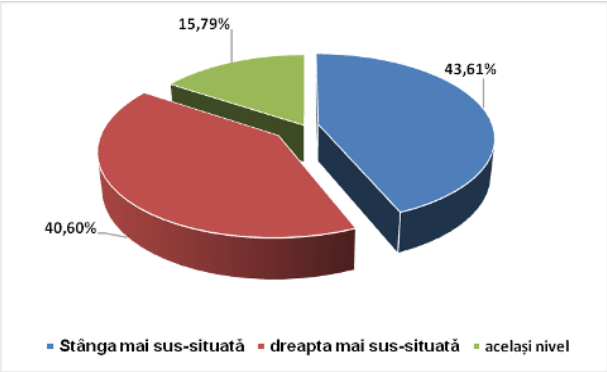


Chart no. 1. The origin of the internal iliac arteries compared right-left

Fig. 12. Internal Iliac Artery wing originates above - located relative to the origin of the right internal iliac artery.

The origin of the internal iliac arteries as compared with the backbone was studied on 85 angioCT, which may indicate the origin of the 169 internal iliac artery. Of these, 50 were males angioCT, so 100 arteries (arteries studied 59.17 % of the total), iliac arteries 50 and 50 left arteries. For the females, there were 35 cases, which may indicate the origin of the iliac arteries in 69 (40.83 % of the arteries studied) straight roads 35 and 34 left iliac arteries. Most commonly, in 64 cases (37.87 % of all cases), iliac arteries had their origins in the L5 vertebra, following the order of frequency.

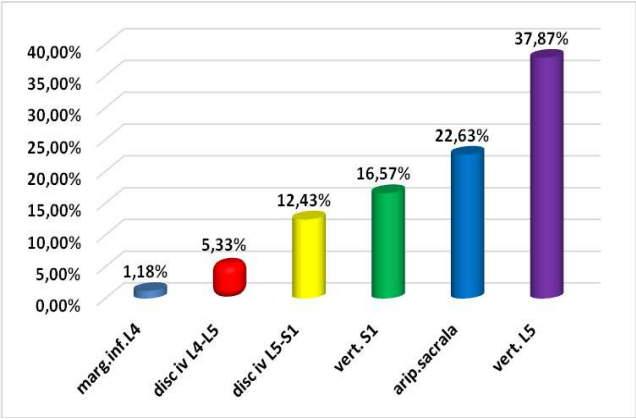


Chart no. 2. The origin of the internal iliac arteries as compared to the backbone.

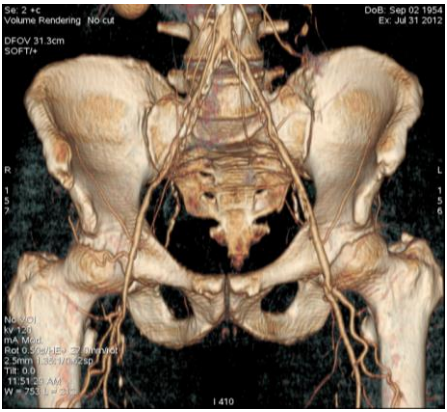


Fig. 13. internal iliac artery originates in the infero ½ - lateral L5 and left internal iliac artery on the underside of the vertebra L4, left internal iliac artery originating above - located (male)

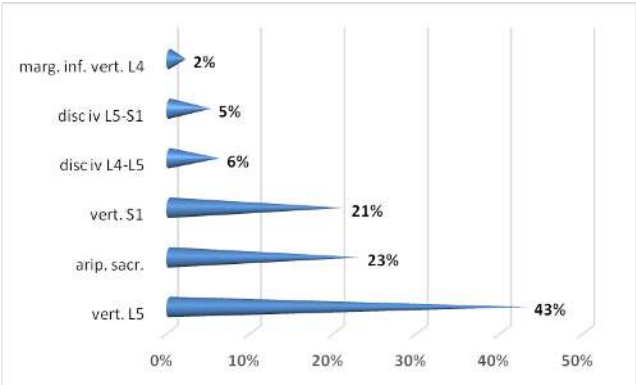


Chart no. 3. The origin of the internal iliac arteries in relation to the spine in men.

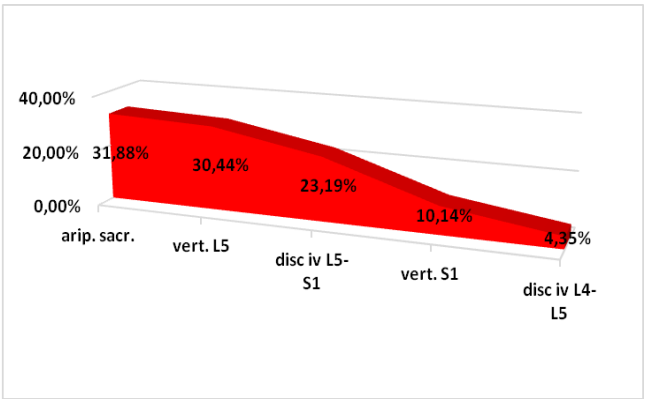


Chart no. 4. The origin of the internal iliac arteries in relation to the spine in women.

My observation is that, for the female gender, origin internal iliac artery on vertebra S1 I met only iliac artery right variant of origin that have not met the iliac artery wing, which thus reveals that in women only has the right internal iliac artery below the home - located relative to the spine. The origin level iliac arteries internal angioCT compared right / left, was studied in 84 cases finding that iliac artery, but originated above - located in 37 cases (44.05 % of cases) in 34 cases 40 48 % of cases), right internal iliac artery originated above -

situ and in 13 cases (15.47 % of cases) the two arteries had its origin at the same level.

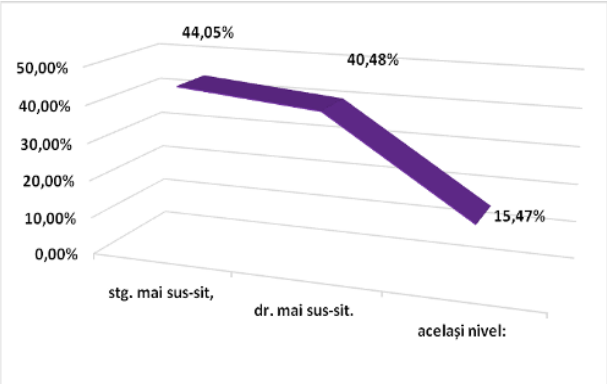


Chart no. 5. The origin of the internal iliac arteries compared right / left by angioCT.

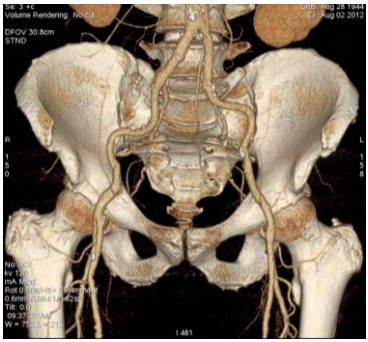


Fig. 14 internal iliac artery originating from the right side of the L5 -S1 disc iv and left internal iliac artery originates at ½ anterolateral upper vertebra S1, closer to the upper edge of the vertebral body, iliac artery right internal originating above - located (male)

Fig.16. The origin of the internal iliac artery is right at the top ½ of L5 vertebra, left internal iliac artery originating from the upper edge of the S1 vertebral artery originating above situated right (male).

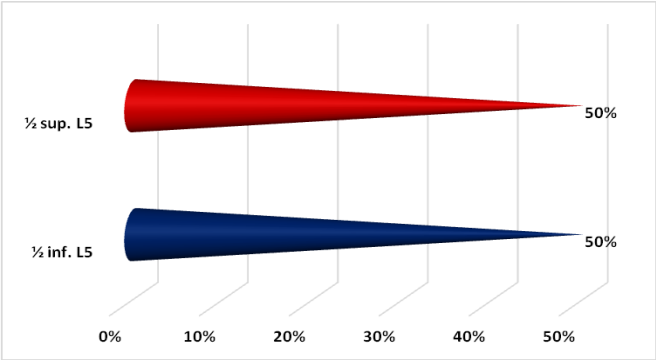


Chart no. 8. Origin internal iliac arteries at the level of L5 vertebra.

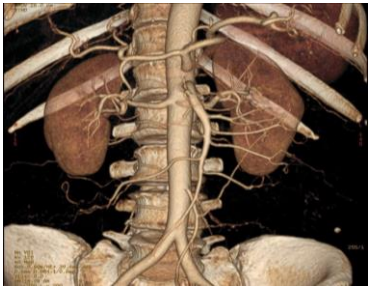


Fig. 18. The origin of the internal iliac artery bottom line is located ½ fin sacral vertebra higher in S1 ½ right and left internal iliac artery origin is in the middle (vertical) fin sacral intervertebral disc in the right L5-S1,

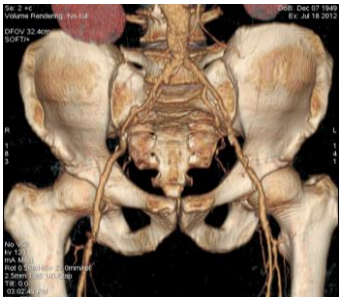


Fig. 19.. The origin of the internal iliac artery is located right at the bottom ½ of the vertebral body L5 (above the bottom edge), left internal iliac artery originating located at ½ superolateral - fin medial sacral artery so right originates above -lying (male).

Analyzing all cases where the internal iliac arteries had their origins in the sacral fin, we found that in 26 cases (57.78 % of cases) was originally located at different levels of the upper fin ½ in 12 cases (26.67 % of cases) was originally located at different levels of the lower ½ of the fin, and in 7 cases (15.56 % of cases) arteries originated was at waist level (vertical) sacral fin.

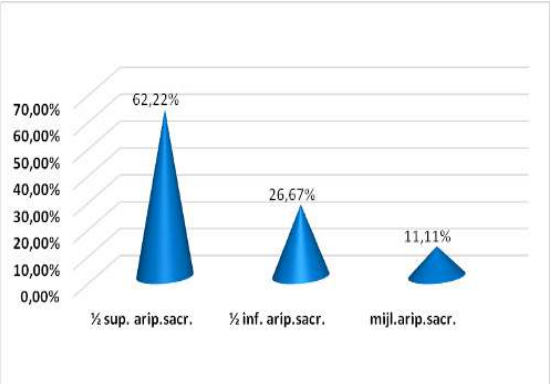


Chart no. 11 The origin of the internal iliac arteries to the sacral fin.

S1 vertebral level to which 28 arteries had their origins, all with the origin located in the top ½ of the vertebra in 15 cases (53.57 % of cases) was originally located closer to the top of the vertebra, and in 13 cases (46.43 % of the cases) the origin of the artery was found even at the level of its upper edge.

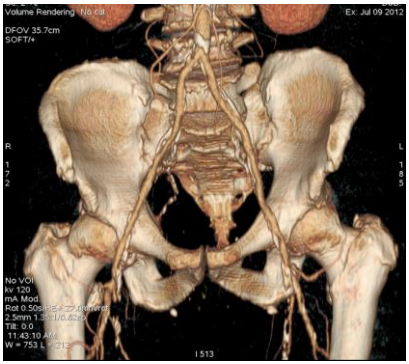


Fig. 22. The right internal iliac artery originates at the top ½ of the vertebra S1 (closer to the top) side supero- first sacral formen. Left internal iliac artery shows the origin located all in top ½ of the vertebra S1 (closer to the top), two arteries originating at the same level (male).

The origin of the internal iliac arteries at the level L4 -L5 intervertebral disc, was found in 9 cases (5.33 % of cases)out of which 6 cases (66.67 % of cases) were males 3 cases were women (33.33 % of cases), but only left internal iliac artery. The origin of the internal iliac artery is at the L5 -S1 intervertebral disc, from a total of 21 cases, 5 cases were male(23.81 % of cases) and the remaining 16 cases were female (76.19 % of cases).

INTERCOURSES BETWEEN INTERNAL ILIAC ARTERY WITH COMMON AND EXTERNAL ILIAC ARTERY.

The angles formed at the origin of the internal iliac artery between it and the common iliac arteries and external, were studied in a total of 24 cases, including 22 cases in women and only two cases in men, this being the reason for which we did not conducted a statistical relation to sex of subjects. In the bifurcation of the common iliac artery, between internal and the corresponding external iliac, an angle is formed which has a value between 15,42-70,04o. This angle has higher values in the bifurcation of the common iliac artery terminal, its values were recorded between 17,43-70,04o. At the origin of the iliac artery, between the left external iliac artery and the corresponding one, an angle of 15,42-58,42o is formed.

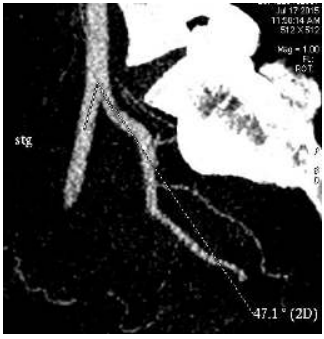


Fig.34. Angle bifurcation of the left common iliac artery in women of 47,1o.

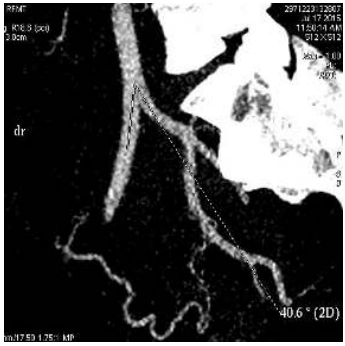


Fig.35. Right common iliac artery angle bifurcation in women of 40,6o.

I found aut that in 14 cases (58.33 % of cases) the angle between the internal and external iliac arteries was larger than the one between the left and the right, with differences between 3,16-28,1o. In 10 cases (41.67 % of cases) the right angle was higher, with differences 2,7-33,93o. Between right common iliac artery and the corresponding internal iliac, there is an angle whose value was between 137,2-171,3o and between the common iliac artery and left internal iliac, there is an angle having a value between 129,1-175,0o.

In 12 cases (50 % of cases) the right angle was higher than the left angle with 3,6-16,5o and in the other 12 cases the left angle was higher, with differences 0,26-13,3º.

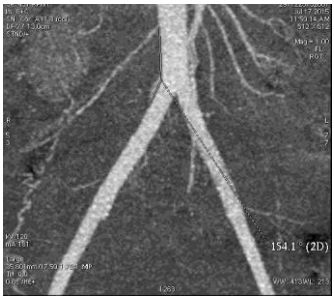


Fig.36. Angle between internal and common iliac arteries straight 154,1o.

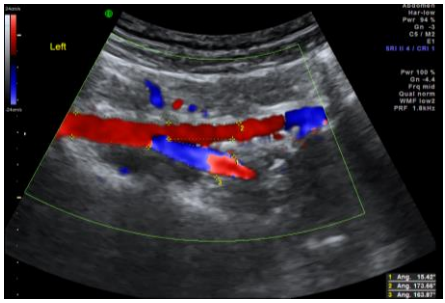


Fig. 37. The angle of the left common iliac artery bifurcation has 15,42o; the angle of the left common iliac artery and the corresponding external iliac has 173,64o, and the angle of the left common iliac artery and the left internal 163,87o value therebetween is a difference in 9,77o for the angle of the left common iliac artery and left external iliac.

By measuring the angle between the common and external iliac arteries straight, we could make a comparison with the angle between the common and corresponding internal iliac. The angle between the common and external iliac arteries straight I found worth between 152,1-172,2o, on the left side this angle having a value of 165,97-177,95o. Making a comparison between the angle of the right common iliac artery and right internal iliac angle of the right common iliac arteries and external iliac appropriate, we found that in 17 cases (70.83 % of cases) the angle of the right common iliac arteries and external iliac It is higher, with differences 8,07-19,4o. In 7 cases (19.17 % of cases) the angle of right common iliac artery and iliac was higher, internal differences 0,8-15,48o.

The same comparison, but from the angle of the left common iliac artery and left internal iliac angle of the left common iliac arteries and external iliac wing, we found that also in 17 cases (70.83 % of cases) the angle is larger between the left common iliac arteries and external iliac wing, with differences 2,81-33,42o. In 7 cases (19.17 %

of cases) the angle was higher between the left common iliac artery and left internal iliac, with differences 9,0-37,8o.

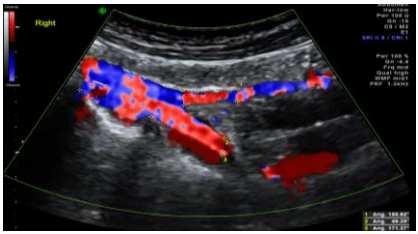


Fig. 38. The angle of bifurcation of the right common iliac artery is 49.35; the angle of the right common iliac artery and external iliac proper has 155,82o and the angle of the right common iliac artery and the right internal value 171,37º.

RESULTS RELATED TO THE PHYSIOLOGY OF BLOOD CIRCULATION WITHIN ILIAC ARTERIES,SP(SYSTOLIC PEAK), ED (DYASTOLIC END),E/D,RI(RESISTANCE INDEX)

These circulating parameters were determined by ultrasound on a total of 24 cases, including 22 cases in women and only two cases in men, a total of 24 cases, including 22 cases in females and two cases males. In all three types of iliac arteries (common, external and domestic) the studies were made comparing PS (systolic peak), Ed (diastolic end), S / D (ratio of PS and ED) and RI (resistivity index).

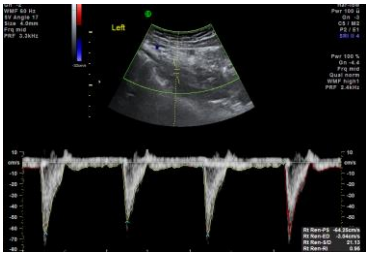


Fig. 39. The left common iliac artery PS : - 64.25 cm / s : ED - 3.04 cm / s; S / D : 21.13; RI : 0.95.

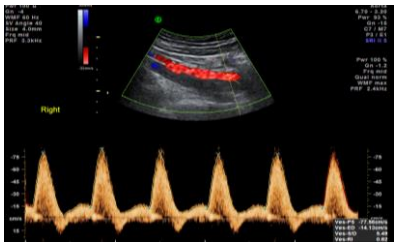


Fig.40. Right external iliac artery : PS : - 77.54 cm / s; ED - 14.13 cm / s; S / D : 5.49; RI : 0.82.

PS internal iliac artery was set at the value of (-42.22) - (-95.21) cm / s, the right has the value between (-43.76) - (- 78.89) cm / s, and left internal iliac artery PS has a value between (- **(-42,22)-(-95,21) cm/s.**

La nivelul arterei iliace interne ED avea o valoare de (-42,22)-(-95,21) cm/s, artera iliacă internă dreaptă având un ED de (-43,76)-(-78,89) cm/s, iar artera iliacă internă stângă avea ED de (-42,22)-(-95,21) cm/s.

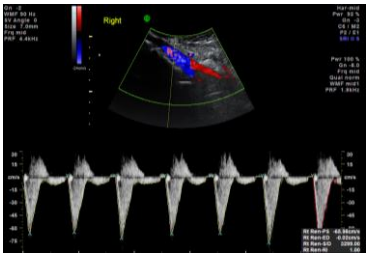


Fig. 41. The right common iliac artery : PS : -65.98 cm / s; ED - 0,02 cm / s; S / D : 3299.00; RI : 1.00.

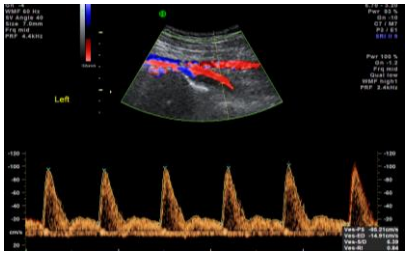


Fig. 42. Internal iliac artery 42. Left: PS : -95.21 cm / s; ED : -14.91 cm / s; S / D : 6.39; RI : 0.84.

Internal iliac arteries showed a S / D - 6.75 to 32.99, with a right internal iliac artery S / D of 8.85 to 32.9 and a left internal iliac artery S / D - 6.75 -28.48.Internal iliac arteries had an RI value of 0.81-0.94, internal iliac artery with an RI of 0.81-0.94 right and the left with a RI of 0.82-0.93.

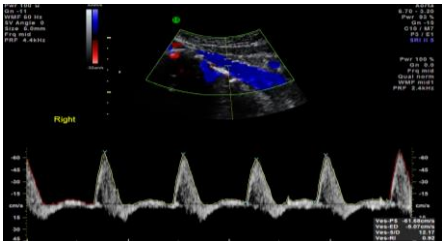


Fig.43. Right common iliac artery : PS : 61.68 cm / s; ED : 5.07 cm / s; S / D : 12.17; RI : 0.92.

DISCUSSIONS

The origin of the internal iliac arteries depends on the origin of the common iliac arteries aorta, common iliac arterial trunk length and its path. In all cases I have found the origin of the internal iliac artery bifurcation of the common iliac artery terminal proper (1) finding that variant in 99 % of cases, internal iliac 1% of cases originating directly

from the aorta. A similar case is quoted by (2). It is noted that (3,4,5) do not cite the origin of the internal iliac artery L5 -S1 intervertebral disc caudal (6,7,8,9) and finds it at the sacroiliac joint, without specifying the origin, (10) locates sacroiliac joint medial relative to the trailing edge of the fin sacral artery origin finding myself L5 -S1 intervertebral disc under and fin sacral level in 73 cases (43.40 % of cases), (11) finds below the upper edge the sacred in 17 % of cases (12) finds in 58.3 % of cases S1 vertebra and (13) finds in 80.79 % of cases.

CHART NO3. The origin of internal iliac arteries

AUTHOR	THE ORIGIN OF INTERNAL ILIAC ARTERY
Lipshutz	14,5% L5; 85,5% interval L5-S1
Testut	The level of sacro-iliac artic.;
Paturet	the upper edge of the fin sacral vertebra; lumbar-sacral disc, 4.5 cm midline, slightly medial sacroiliac interlining;
Rouvière	the upper edge of the fin sacral vertebra; lumbar-sacral disc, 4.5 cm midline, slightly medial sacroiliac interlining; the upper edge of the fin sacral vertebra; lumbar- sacral disc, 4.5 cm midline, slightly medial sacroiliac interlining;
Bergman	68%: L_5- sup. Border S_1; 12%: higher de L_5; 17%; below the sup border of sacrum,the left is divided later than the right
Gray	lumbar- sacral disc; left lower -lying;
Pillet	medial artic. sacroiliac, compared with marg. post. fin sacral; St side. 4 cm, Dr.. 3 cm;
Moore	superior articulaţiei sacro-iliace, la nivelul discului iv sacroiliac joint top at the L5 -S1 disc iv
Lippert	99% of the common iliac bifurcation; 1% directly from the termination of the aorta, common iliac artery missing.
Naveen	58,3% S1; 40% disc iv L5-S1; 1,7% L5;
Ionescu	male: sup. Border L4- inf part of sacral fin; fem: sup border L5-1/2 inf sacral fin; AIISt male: sup border L4- ant surface of sacrum; fem: ½ inf L5- middle sacral fin.

Cazuri personale	male: L5- 45%; sacr. fin: 23%; S1: 21%; disc iv L4-L5: 6%; disc iv L5-S1: 5%; inf border L4: 2%; fem: sacr. fin: 31,88%; L5: 30,44%; disc iv l%-S1: 23,19%; S1: 10,14%; disc iv L4-L5: 4,35%.

High Origin (mobile spine and vertebra S1) was closer to the midline, while low level fin sacral origin was farthest from the midline. I met the high origin in 96 cases (56.80 % of cases), (11) met in 68 % of cases (12) in 51.7 % of cases, and (13) 19.29 % of cases.

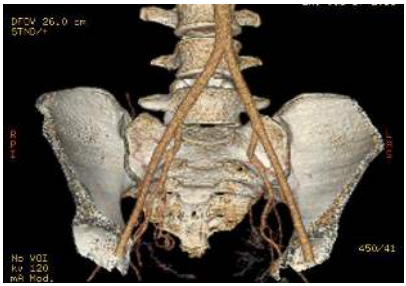


Fig. 44. The right internal iliac artery originates high on the underside of the L5 vertebra and left internal iliac artery originates low in the upper fin ½ sacral median horizontal (female).

Fig. 45. Origin low both internal iliac arteries : the right to the middle of S1 vertebra and the left in ½ aceleeaşi lower vertebrae closer to the bottom edge (males).

Low origin found by me (43.40 % of cases) is met by (12) in 58.3 % of cases and by (13) in only 19.29 % of cases. (14) derives from the internal iliac artery at the level of L5 in 14-15 % of cases, the remaining 85.5 % of the origin is in the range of L5 -S1 without other specific details.

With regard to the angle which is formed between the two iliac arteries, internal and external (4) states that the initial segment of the internal iliac artery is compared with the external iliac artery, the two arteries neîndepărtându into each other, nevertheless making an angle being arranged approximately parallel to and just after a distance of 1.5-2 cm separated with each other with a time of 0.5-0.6 cm and (14) found that in most cases the internal iliac artery forms with external iliac artery an acute angle. I have always found that the

angle of bifurcation of the common iliac arteries is below, reaching a maximum of 70,04o right common iliac artery.

Fig. 46. The angle between the internal and external iliac arteries 70,4o right does (females).

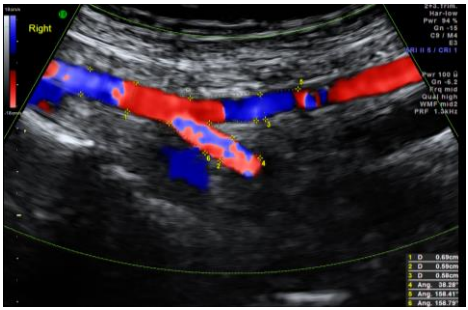


Fig. 47. The angle of bifurcation of the right common iliac artery has 34,28o; the angle of the right common iliac artery and right internal 158,79o is and the angle of the right common iliac artery and right external 158,41o have, between them there is a difference 0,39o for the first (female)

The minimum value of this angle is greater 2,01o on the right, and the maximum value is less on the left to 11,62o. When the angle of the left common iliac artery and the left internal iliac artery, as compared with the angle of the left common iliac artery and the left external iliac between minimum values of the two angles 36,87o there is a difference in angle for the left and between the values maximum these angles there is a difference 2,95o also in favor of the left angle.

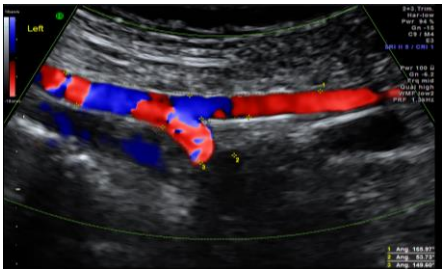


Fig. 48. The angle of the left common iliac artery bifurcation has 53,73o; the angle between the left common iliac artery and left internal is 149,60o and the angle between the left common and external iliac arteries, but has 165,97o, between them there is a difference 16,37o in favor of the second angle (female).

MORPHOMETRY OF INTERNAL ILIAC ARTERIES

LENGHT OF THE INTERNAL ILIAC ARTERY

It was determined the 92 cases, of which 60 cases in males (65.22 % of cases), 30 on the right and 30 cases on the left, and 32 cases in women, each of the 16 cases the two parts of the body.

The length of the internal iliac arteries in 92 cases, we found between 12.7 to 61.8 mm.

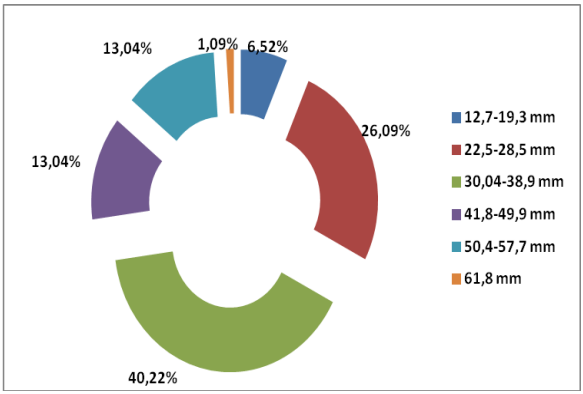


Chart 43. Length of the internal iliac arteries

Iliac arteries, measured in 46 cases (50 % of cases) until the first side branch, had 15.6 to 57.7 mm length range and left iliac arteries, also measured in 46 cases (50 % of cases) had between 12.7 to 61.8 mm length until the first collateral ram.

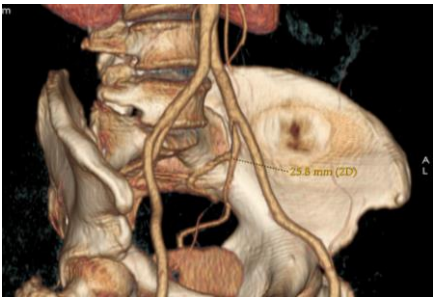


Fig. 53. The left internal iliac artery has a length of 25.8 mm (female)

DISCUSSIONS

When compared with the data from the consulted literature, my results are presented more in detail, and analyzed according to several criteria. I may say that measurements were performed only on angioCT.

CHART NO. 4. LENGTH OF INTERNAL ILIAC ARTERY

AUTHOR	**LENGTH AII** (mm)
Farabeuf	20
Testut	18-40
Bleich	medie: 27 (0-52)
Pillet	medie: 4 (0-70)
Naveen	medie 37+/-4,62 (13-54)
Yun Sun	6,6-98,0
Iancu	40-70
Fătu	male: 20-90; female: 30-80
Personal cases	AIIDr: male: 15,6-54,5; fem:19,3-57,7; AIISt: male: 12,7-61,8; fem: 13,8-56,7.

It appears that I have not found any case, in both sexes, the length of the internal iliac artery until the issuance of the first ram, be less than 12.7 mm, as opposed to (test), which gives the lower limit length 18 mm, or to (Bleich, Pillet) citing cases where length is zero artery, the artery branching showing since its origin. Also, I found a length greater than 61.8 mm (only one case in males the left iliac

artery), other authors citing cases in which iliac artery length to 70 mm (Pillet, Iancu), or 90-98 mm (Yun Sun, Fatu). The authors (Farabeuf quoted test, the test, Bleich, Naveen)stated that the maximum length is less than that found me with differences of 5.7 to 37.7 mm.
Comparing the lengths of the two parts of the body, I found that for males, in 30 cases, right iliac artery was longer than the left in 19 cases (63.33 % of cases), with differences of 2.9 to 19 5 mm. In 11 cases (36.67 % of cases) internal iliac artery was longer by 4.2 to 11.6 mm, but with differences
In women, in 16 cases, right iliac artery was longer in 10 cases (62.5 % of cases), with from 1.0 to 24.8 mm differences, and in 6 cases (37.5 % of cases) left iliac artery was longer, with differences from 1.0 to 14.2 mm.

Although (16) gives an average length of 30-50 mm, mentions variant which in some cases is short, its branches being created directly from iliac's fork and others when the artery is long and common iliac bifurcates prematurely, artery may have a length of 6-7 cm segment suprapelvin, with an average of 2-3 cm, the artery was located 4.5 cm from the midline. In these cases, the initial segment is always long enough to perform ligation (ligation segment), in most cases exceeding 2 cm segment ligature.

SIZE OF INTERNAL ILIAC ARTERY

Internal iliac artery caliber I measured on 132 roads, of which 60 arteries in women (by 30 arteries on each side of the body) and 72 arteries in males (by 36 arteries on each side of the body).

Internal iliac artery had a caliber of 2.5-10 mm at the level of the male sex from 2.5 to 9.8 mm caliber being and the level of 3.1 to 10 mm females.

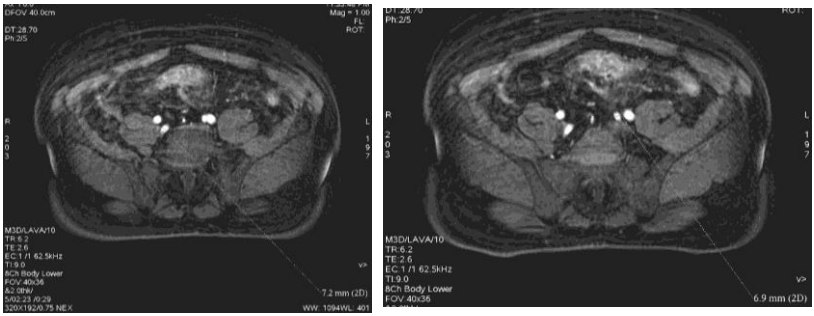
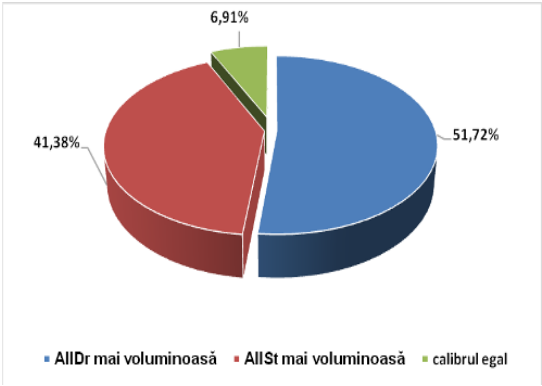


Fig. 58. The right internal iliac artery, is 7.2 mm caliber and left internal iliac artery caliber 6.9 mm (male) between the two arteries here is a difference of 0.3 mm to the right.



Size Chart 46. internal iliac arteries compared Right / Left

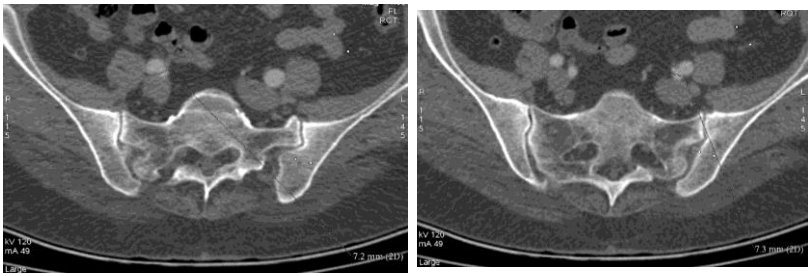


Fig. 59. The right internal iliac artery, is 7.2 mm caliber and left internal iliac artery caliber 7.3 mm (female) between the two arteries there is a difference of 0.1 mm for left artery.

Comparing the common iliac arteries' caliber with the internal iliac arteries' caliber, I found that common arteries had a greater caliber than the 0.1 to 7.6 mm, for the males the difference being 2.8 to 8.2 mm differences and from 0.1 to 7.6 mm in women.

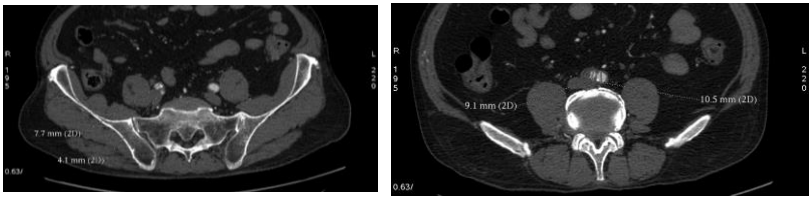


Fig. 63.. Straight-gauge common iliac artery (9.1 mm) is greater than 5 mm caliber internal iliac artery, external and iliacei caliber straight is greater than 0.5 mm caliber corresponding iliacei internal (male).

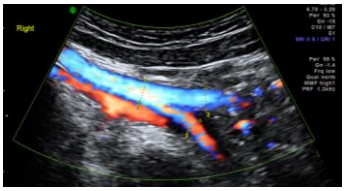


Fig. 63. The right common iliac artery caliber (8.0 mm) is higher by 2.5 mm than the right internal iliac artery caliber (5.5 mm) in women

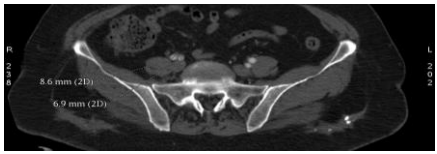


Fig. 66. Size right external iliac artery (8,6,1 mm) by 1.7 mm greater than the right internal iliac artery caliber (6.9 mm) in women.

If we compare for males the external iliac artery' caliber with the internal iliac arteries, a total of 62 cases (32 right arteries and 30 left arteries) I found that in all cases the external iliac arteries had a greater caliber of 0.2 to 8 1 mm than domestic ones. In females, for a total of 42 cases (20 arteries and 22 arteries straight left), in 36 cases (85.71 % of cases) external iliac arteries were higher than domestic caliber with diferrences of 0, 1 to 6.7 mm, in 6 cases internal iliac arteries with a greater caliber (14.29 % of cases), with differences from 0.1 to 2.2 mm.

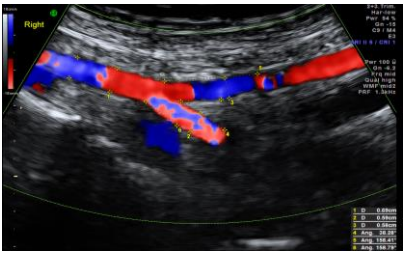


Fig. 67. The right internal iliac artery caliber is higher by 0.1 mm than the corresponding caliber external iliac artery (females).

DISCUSSIONS

CHART NO. 5. CALIBER OF INTERNAL ILIAC ARTERY

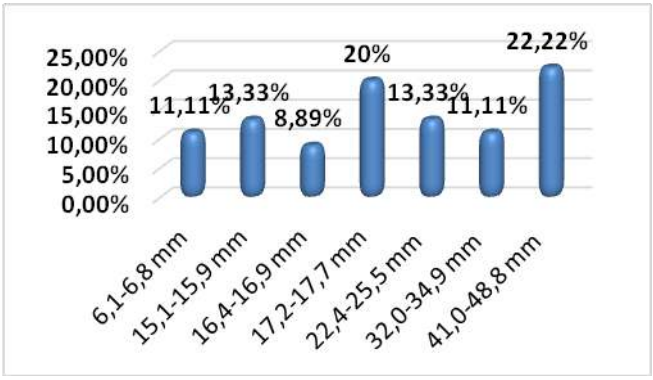
AUTHOR	**CALIBER AII** (mm)
Testut	Internal iliac artery is less voluminous than the external one
Paturet	8-9
Bleich	medie: 5 (2-12)
Pillet	8-9
Fătu	male: 3-13; feminin: 4-11
Ionescu	AIIDr: male: 3-9,8; fem: 3,9-6,6; AIISt: male: 2,5-9,6; fem: 3,9-6,6.
Personal cases	AIIDr: male: 4,1-9,8 (media: 6,36); fem:4,4-8 (media: 6,22); AIISt: male: 2,5-9,6 (media:5,58); fem: 3,1-10 (media:6,62).

By comparing my personal results on the caliber of internal iliac artery to those in literature, we notice the following:, it appears that (6.16) shall give a unique value for both arteries, only (1,2,3,4) stating that the internal iliac artery is less bulky as external, without giving the percentage differences and differences in sex. (5) gives a range of 2-12 mm caliber both internal iliac arteries, and (11) mentions the gender arterial caliber, finding differences in the minimum size of 1 mm for females, and for the maximum size differences of 2 mm for males. Minimum size common iliac artery me in males is less than 1.1 mm from (7.17) and maximum value is less than 3.2 mm of (7), the same (17). Minimum value encountered in the female sex to me is greater by 0.5 mm from (17) and 0.4 mm of (7), the maximum being

less than 3 mm front (7) and higher by 1 4 mm to (17). The left internal iliac arteries, in males: I noticed the minimum is less than 0.5 mm of (7), the same result's (17), the maximum being less than 3.4 mm front (7) and the same with his result (17). The lower caliber left internal iliac arteries in women found me, is greater than 0.4 mm from (7) and higher by 0.5 mm from (17), and the maximum value is less than 1 mm of (7), higher by 3.4 mm compared to (17).

RESULTS AND DISCUSSIONS UPON THE INTERNAL ILIAC VEINS MORPHOLOGY OF INTERNAL ILIAC VESSELS

I observed **the length** of the internal iliac vein on a number of 45 cases, 24 cases on the right (53.33 % of cases) and 21 cases on the left (46.67 % of cases). The result was between 6.1 to 48.8 mm.



Grafic 49. The length of the Internal Iliac Vein.

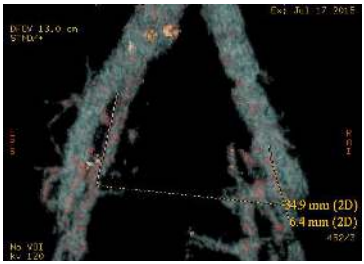


Fig. 85. Left internal iliac vein has a length of 34.9 mm, and the length of the internal iliac vein line is 6.4 mm, the difference in length between the two veins is 28.5 mm.

Fig. 87. The length of the left internal iliac vein is 42.7 mm.

The length of right internal iliac vein, studied in 24 cases, wasfound between 6.1 to 48.2 mm, while for the left internal iliac vein, studied in 21 cases, we found a length of between 16, 4 to 48.8.

From the above data, it appears that the left internal iliac vein has a greater length, with no encountered length less than 16.4 mm, while the right internal iliac veins length were below 16 I met mm in 11 cases (24.44 % of all cases).

In 22 cases we could compare the length of the internal iliac vein, right and left, finding that in 12 cases (54.55 % of cases) left internal iliac vein was longer than the right with 0.5 to 28.5 mm, while right internal iliac vein was longer in 10 cases (45.45 % of cases), with less differences, 1.3 to 8.1 mm. (1,2,3,4) describe internal iliac vein vein as a short, while Tesut gives it a length of 40 mm. At the level of the left internal iliac vein (5) left internal iliac vein is quoted for lengths up to 69-78 mm I maximum length of 48.8 mm finding, so more than 20 mm lower.

In 36 cases, 18 cases each on each side of the body, I could watch on the same subjects the differences in length between internal and external iliac veins, finding that the length of external vein was higher in 35 cases (97.22 % of all cases), with a difference between 1.5-80 mm. In only one case I have found that the length of the two was equal.

For the right external iliac veins t, for which I found a length of 80.3 to 101.0 mm in 17 cases (94.44 % of cases), their length was longer as compared to the corresponding internal iliac vein length It is 1.5 to 80.0 mm. In one case (5.56 % of cases)the caliber was equal for both veins.

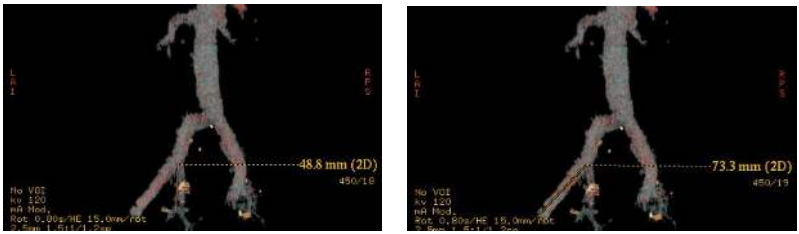
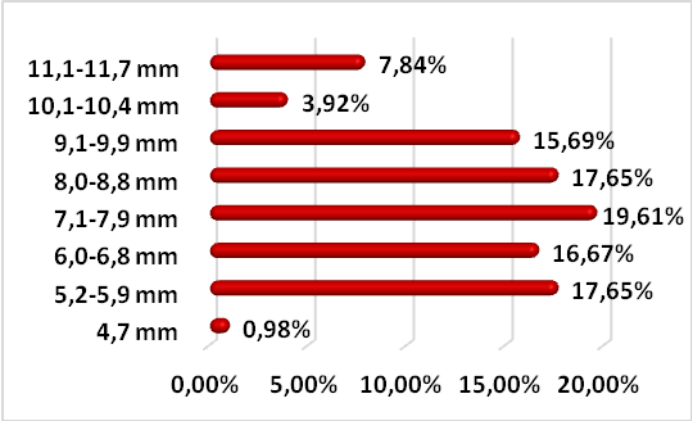


Fig. 88. The length of the left internal iliac vein is 48.8 mm and the length of the right internal iliac vein is 73.3 mm, being longer than the internal one with 24.5 mm

Size of the internal iliac vein was studied at their origin, and at their ending on a total of 102 cases, 48 cases from the right (47.06 % of cases) and 54 cases on the left side (52.93 % of cases). Internal iliac vein had a caliber between 4.7 to 11.7 mm and right internal iliac vein, had a caliber at its ending between 4.7 to 11.1 mm.



Grafic 52. The caliber at the ending of the iliac vein

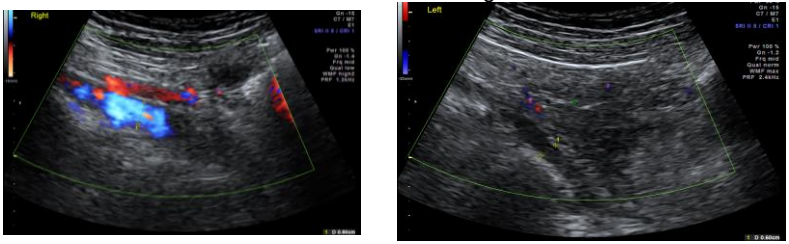


Fig. 89. Size at the end of the right internal iliac vein is 8.0 mm

Fig. 90. Size at the end of the left internal iliac vein is 6.0 mm.

It appears that in 66.67 % of cases the right internal iliac veins ihas the caliber between 7.1 to 9.7, the left internal iliac veins having the same proportions between 6.0 to 9.9 mm caliber. On both sides, in 9 cases, the caliber was between 5.2 to 5.9, 18.75 % of them being right veins, and 16.67 % of cases being left veins.

Bulky (4) to (1,2,3), the internal iliac vein is very bulky, its diameter being less than 8-10 mm, I finding the right internal iliac vein minimum size of less than 3, 3 mm, and the left iliac vein lower by 2.8 mm. For (6), reduced to 4 mm caliber iliac vein is a high risk of venous thrombosis installation.

(7), on a lower number of cases, reveals that at the level of right iliac the caliber is between 6,1-10,2 mm, and at the left iliac vein, the caliber is between 5,9-9,9 mm. Though both studies took place in the same area, (7) didn't find at the ending of the internal iliac veins a caliber larger than 10,2 mm at the level of right internal vein, and 9.9 mmas a maximum for the left one. Also, there was no caliber 5,9 mm on the left veins (0,7 mm larger than the one I have found), respectively 6,1 mm for the right veins (1,4 mm larger than the one I have found).

By comparing **internal iliac arteries caliber** with that of their **corresponding veins**, I had found that the minimum size of veins was 2.2 mm larger than that of the arteries, and that the maximum size is larger by 1.7 mm The internal iliac veins have a difference at the level of the minimum size and maximum size level higher by 1.7 mm. At its minimum, left internal iliac vein has a difference of 3 mm, and at the maximum of 1.7 mm.

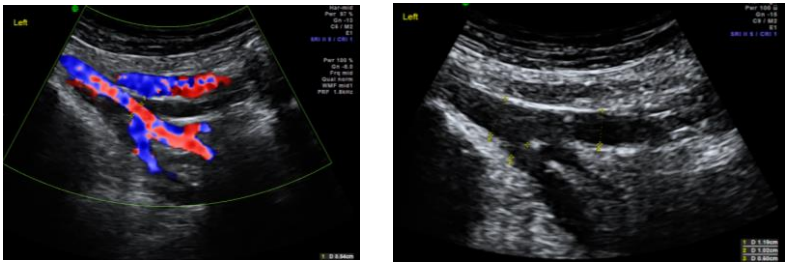


Fig. 92. Size of left internal iliac artery is 5.4 mm and the size of the left internal iliac vein is 6.0 mm, the vein with a caliber larger than 0.6.

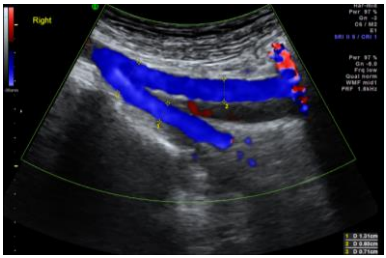


Fig. 93.. Right internal iliac artery has a size of 7.1 mm, corresponding vein has a size of 7.4 mm and is more voluminous than 0.3 mm artery.

I've compared the **internal iliac vein caliber** with the **common iliac vein's caliber** on a number of 36 cases, 18 cases each of the two parts of the body. In 91 cases, the size of the common iliac vein was found between 9.0 to 17.4 mm,the dimensions of the right common iliac vein between 9.0 to 16.8 mm caliber and the left common iliac vein's dimesion between 9.2 to 17.4 mm caliber

By comparing personal results with results found by(7) in respect to the caliber of the common iliac vein, I have not found the end of the left veins'caliber less than 9.9 mm, while at (7) The minimum size is 5, 6 mm. At the level of right Internal iliac vein (7) finds the minimum size of 11.1 mm and maximum size higher, right veins of 18.9 mm (2.1 mm larger than the one found by me) and left veins of 20 mm (with 2.6 mm larger than the caliber found by me).

Fig. 95. The left common iliac vein caliber is 9.9 mm.

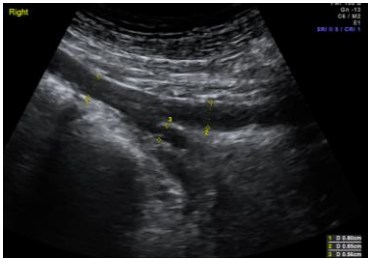


Fig. 96. The right common iliac vein caliber is 8.0 mm and the size of the internal iliac vein is 5.6 mm straight, the internal one is less voluminous 2.4 mm (70%).

In the 36 cases in which I compared the ratio between the internal iliac vein caliber and the corresponding common iliac vein, we found that the latter presents in all cases a difference in caliber larger than 2.0 to 9.5 mm

We compared the internal iliac vein caliber with the corresponding external iliac vein in 96 cases, 46 rightveins (47,92 % of cases) and 50 left veins (52.08 % of cases).

At the level of the right internal and external iliac vein, from 28 cases, in one case (3.57 % of cases), the internal iliac vein caliber is larger than 1.8 mm, in 2 cases (7.14 % of the studies) the two veins had an equal caliber, and in 25 cases (89.29 % of cases) external iliac vein was more voluminous than the 0.6 to 4.7 mm internal At the level of the left internal and external iliac veins in 28 cases, 2 cases (7.14 % of cases) have internal iliac vein caliber greater than 0.4 or 0.7 mm, while in the other 26 cases (92.86 % of cases) the external iliac vein was more voluminous than 0.5-5.5 mm internal.

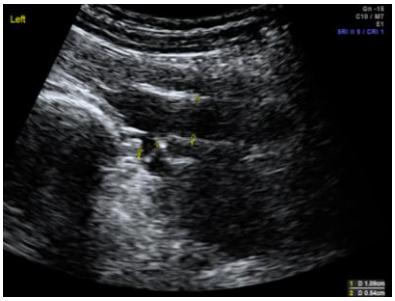
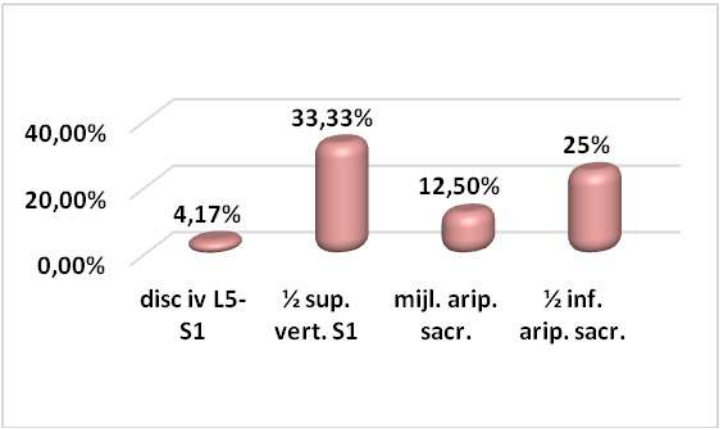


Fig. 101. Calibre 101. Left internal iliac vein is 5.4 mm and the size of the left external iliac vein is 10.9 mm, external iliac vein is more voluminous -5.5 mm.

TERMINAL PART OF THE INTERNAL ILIAC VEINS

On a number of 48 cases, 24 cases each on either side of the body, I have studied the level and type of internal iliac artery with the external iliac artery to form the common iliac vein.



Grafic 65. Level of completion of the internal iliac vein (common iliac vein formation).

I have taken into account the cases in which the internal iliac vein and external mix with the top end vertebra S1, which is an aspect found in 30 cases (62.5 % of the cases), in the left 18 cases (37.5 % of the cases) being just a low end.

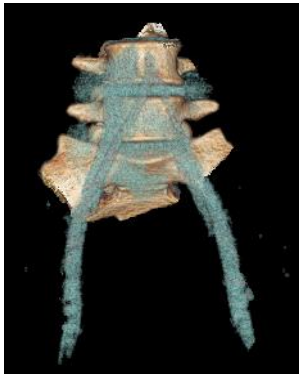


Fig. 102. Centralising iliac vein, internal and external, at Level IV L5- S1 disc, and those left to the upper edge of S1 vertebra, right common iliac vein formation of the above - located.

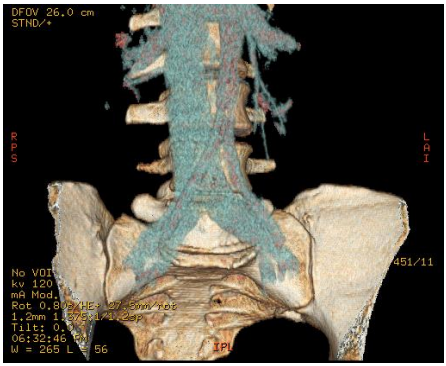


Fig. 104. The right internal iliac vein terminates at the L5 -S1 disc iv (high end) on the right side of it. Left internal iliac vein in the upper end of the middle half of the fin sacral (high end), left common iliac vein forming the straight caudal.

We found that the right internal iliac veins shows a wider range of choices to end in the veins encountering left L5 -S1 disc iv. Left veins showed this in a number of 9 cases it end in the S1 vertebra, while right veins show this variant in 7 cases. However, both right and left veins present an equal number of cases with a high end (9 patients, 37.5 % of the cases). By comparing on a number of 45 cases, the completion of the internal iliac vein of the two parts of the body, we found that in 24 cases (53.33 % of cases) left common iliac vein forms right above, while in 12 cases (26.67 % of cases) it forms right above common iliac vein and in 9 cases (20 % of cases) both internal iliac veins ended the same, joining with external iliac vein of the same side to form the corresponding common iliac vein.

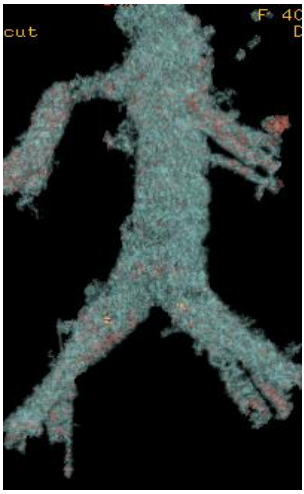


Fig. 105. The right internal iliac vein ends headed to the left one

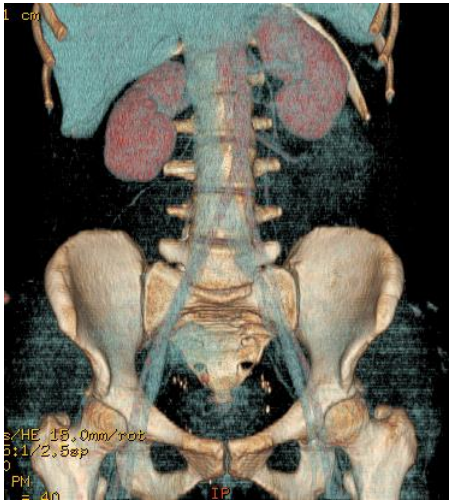


Fig. 108. The terminal aorta bifurcation and common iliac arteries is above the formation of the inferior vena cava, common iliac vein formation respectively.

By (8), internal iliac vein joins external iliac vein on the L5 vertebra to form common iliac vein, though in personal study I did not found any case in which the internal iliac vein ends above the L5-S1 disc iv. (5) states that the common iliac vein formation occurs

posterior-inferior to the artery bifurcation-the personal aspect in my study. Classical anatomists (1,2, 3,4,9),and also the contemporary (8,10,11) find that common iliac arteries branch off terminal cranial and left common iliac vein formation. (4) states that the vein is placed lateral to the artery, the left one being located higher and posterior than the right. On the right, venous confluence is typically at 1-1.5 cm below-inferior to the ramification of the common iliac artery, being willing to fork angle or may be coated pressure, especially on the left, the internal iliac artery, especially when originally, the two iliac arteries are adjacent to each other (Proust and Maurer, cited 4). To the left, the confluence of the vein is partially covered by the top of the internal iliac artery (4). By (8.9), internal iliac veins form large ischial notch higher, being located posterior inferior internal iliac arteries. (11) cites cases of internal iliac vein straight bifida, which can sometimes be duplicated by a sept in two stacked vessels, or plexiform. The duplication of the internal iliac vein in two pots of which one is above the other rear up- the corresponding internal iliac artery by Grégoire (quotation 4).

Personally I have not met any of these versions of the internal iliac arteries.

According to (13) left internal iliac artery is located homonymous side in 70.6 % of cases and internal iliac vein is located right lateral homonymous artery in 93.3 % of cases. Referring to the angle formed by the internal and external iliac vein, we found a range between 24,8-47,8o difference between minimum and maximum value of this angle being 13o. In the right iliac vein confluence, this angle was 24,8-32,0o. In the left iliac vein confluence, this angle was between 32,2-47,8o.By Comparing the left and right angles, I always found that venous confluence angle to the left was larger than the right angle.

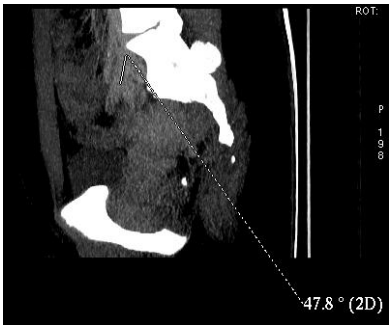


Fig. 111. Iliac veins confluence angle to the right is a 27.9, and at the left is 47,8o the difference between them is 9,9o.

The iliac vein and internal iliac vein(same side) form an angle with a value of between 144, 8o, 6o, -162 at the level of right veins of low angle 144,6 -160, 2 °, and at the level of the left iliac vein of 154,2 -162, 8o. Between the left and right angles there were differences, being more bulky left arm angles, at the level of the minimum angle with 9, 6o and at maximum angle with level 2, 60.

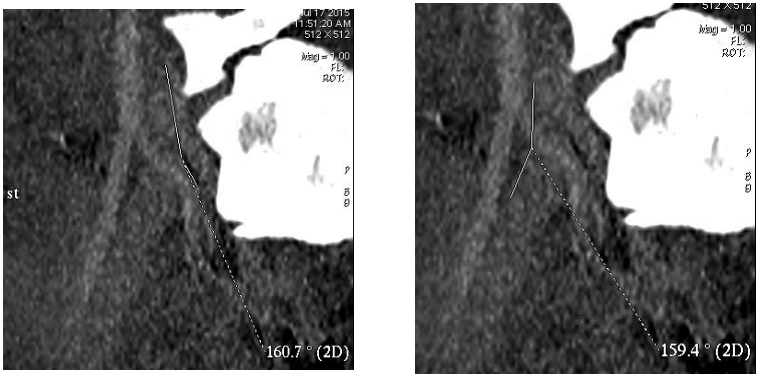


Fig. 112. The angle between the common iliac vein and left internal vein has 160,7o and has 159,4o between the right, the left having a value greater 1,3o.

RELATIONS BETWEEN RIGHT COMMON ILIAC ARTERY WITH THE RIGHT ILIAC VEIN

I have studied a total of 48 cases that have special importance in the clinical syndrome of the right common iliac vein compression and installation of venous thrombosis (6). By (13), iliac vein compression is found in 50 % of patients with iliac vein thrombosis on the left, compression can go up to 50%. By presenting different degrees of compression of the right common iliac vein, severe symptoms manifest themselves in 2-5% of cases (13). (14) found the syndrome quite common on autopsy in 22 % of cases.

Negus, (cited by 5) describes three kinds of ratios of the right common iliac artery with the right common iliac vena, his findings resulting from a 97 dissections : in 75 % of cases meets classical type of crossing the iliac vein by right common iliac artery; 22 % of the right

common iliac artery crosses the inferior vena cava to the right side wing has the right common iliac vein, calling him a **" tall type"**; 3 % of the right common iliac artery previously crossed common iliac vein, go on the left before his cross to pass on the edge of his right, calling this variant **" type located below "**.

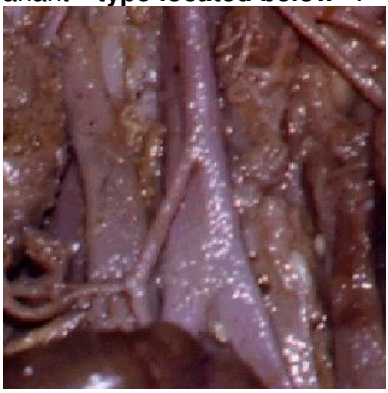


Fig. 113. Right common iliac artery passes right above the internal iliac vein, the terminal bifurcation of the aorta is flush with the formation of the inferior vena cava.

Fig.114. Terminal bifurcation of the aorta cranial formation occurs inferior vena cava, right common iliac artery by cross forming above the inferior vena cava.

In the cases I have studied I have met the following reports between the right common iliac artery with the iliac vein : the most frequently common iliac artery right crossing the front of the inferior vena cava above the confluence of venous iliac common variant that I met în16 cases (33 33 % of cases); in 12 cases (25 % of cases), right common iliac artery passes anterior iliac vein confluence angle joint all in 12 cases (25 % of cases), right common iliac artery was infero - lateral oblique trajectory, passing caudal angle interiliac finally - in 8 cases (16.67 % of all cases) right common iliac artery have a longer route into the front or anterior- medial aspect of the right common iliac artery.

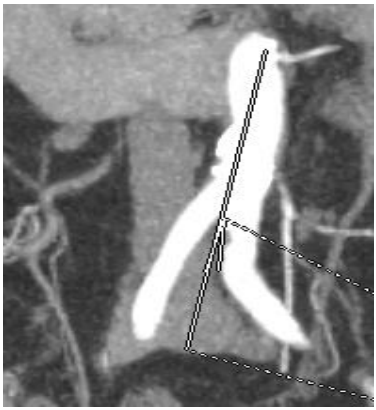


Fig. 115. The right common iliac artery crosses the front of the inferior vena cava, cranial its formation.

Fig. 117. The right common iliac artery, bulky, previously passed interiliac venous angle, to the right common iliac vein has previously.

By (15), the degree of compression of the right common iliac vein by the corresponding artery, the artery is influenced by paths, straight or winding, compression is greater for Tortuous. All (15) state that the left common iliac vein and can be compressed by corresponding artery and also cites iliac vein compression both internal and external, by right common iliac artery.

By (6), the risk of venous thrombosis in the territory iliac vein occurs when the size decreases to 5.4 to 4.8 mm, common iliac venous thrombosis was seen with certainty when the size decreases to 4 mm vein. Common iliac vein stenosis straight, produced by right common iliac artery, can sometimes be very severe, extending to the femoral territory, the only treatment being surgical (16).

Fig. 119. The right common iliac artery crosses the inferior vena cava above its formation and has on the front of the right common iliac vein, iliac bifurcation its corresponding venous confluence law.

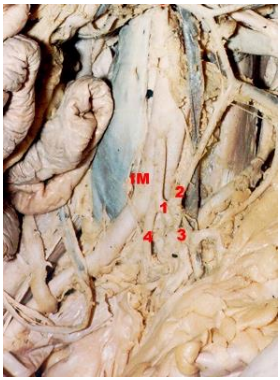


Fig. 120. The right common iliac artery passes into the front of the inferior vena cava, above its formation, passes the front of the right common iliac vein, which branches off from the iliac arteries, internal and external.

Fig. 121. The right common iliac artery passes anterior and anterior angle interiliac common iliac vein.

CONCLUSIONS

The morphology of internal iliac vessels, especially the arteries, presents a great variability, especially as regards the origin, morphometry and collateral branches, diversity highlighted mostly in recent decades due to the development of modern imaging means, which offer detailed and accurate information, which could not be obtained through traditional means of exploration (Picel). At the same time, these non-invasive exploration methods constitute the means of establishing or indicating the diagnosis and recommended treatment to be followed. (Bilhim) emphasizes the role that the angioMR and angioCT. This explains the abundance of information mentioned on specialized publications and press, particularly related to the morphology of the iliac arteries, the veins being less addressed, as is clear from the medical journals that I had the opportunity to study, although their involvement in pathology is quite frequent, sometimes with disastrous consequences.

Some anatomical variations of the internal iliac arteries can be meet frequently: variants of origin, number, size, branching and Terminal catch (that I already described), there are cases where some branches of internal iliac artery can take birth from the external iliac artery, especially the parietal branches: iliolumbar and obturator (Bécade).

The differences between the information obtained from medical journals consulted, may be due to several causes. Firstly, the results depend on the number of cases on which the study is being done, a study conducted on a large number of cases presenting a greater variability of morphological characteristics. Thus it can be explained some differences between the results obtained by me and those of DR. Ionescu C., who has worked on cases in the same geographical area. The results can be different and depending on the geographical area in which the study was carried out and their ethnicity, Naveen claiming this argument through a study conducted over the iliac vessels at the level of the population of India.

An important chapter in internal iliac arterial circulation level is that of anastomoses with other arterial branches, being able to substitute some deficient vascular regions.

Endovascular treatment is currently an alternative to surgery for the treatment of iliac artery aneurysms. A variety of minimally invasive therapeutic options is available and the choice of an appropriate option is essential for obtaining excellent results on a long-term basis and to reduce possible complications: Donas, Cynamon, Kobayashi, Park.

Karthikesalingam and Sadeghi shows the importance of technique used in the treatment of airway stenosis or aneurysm, which is why Lee calls for improving the quality of stent and gryphons by using different materials to withstand as much and not give complications, and Ziegler says that the technique used should ensure the best possible circulation blood pressure pelvic.

Lin says that in a bifurcation above aortic aneurysm, implanting a stent is required on both common iliac artery and internal iliac artery to the left (stent-graft).

At the level of the internal iliac vein I think that presenting a morphology description is very important for the anastomoses between the branches of their home, and anastomoses with the neighbouring veins, their pathology, in particular aneurysm, stenosis and thromboembolism, the importance of morphological findings is manifesting itself and in setting treatment of these diseases.

After the words of Carr Stephanie, there is a correlation between the iliac vein calibre compressed and the risk of deep vein thrombosis at the level above (iliofemurale). That's why it is very important to diagnose anatomical disorders of the iliac vessels to be submitted in a timely manner, in order to be able to medically step in, with great chances to succeed.

Cohen says that the thromboembolism venous (VTE) can be asymptomatic, in which case lead to exitus, frequently.

Cho says that spontaneous rupture of the common iliac vein is very rare (21 cases cited in the medical literature until 2003), being extremely rare the consequence of a venous aneurysm, the latter being produced following a pelvic trauma surgery.

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