



THE ANATOMICAL STUDY OF THE SUPERFICIAL BRANCHES OF FEMORAL ARTERY IN FEMORAL TRIANGLE

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ABSTRACT

The perfect knowledge of anatomy of superficial branches of femoral artery has profound importance for creation of successful flaps and in vulvar reconstruction.

In this study we conducted a quantitative study of superficial external pudendal, superficial epigastric and superficial circumflex iliac arteries as the basis of skin grafts. Present study was undertaken on 20 properly embalmed cadavers. Twenty right and twenty left side femoral triangle of cadavers were dissected. The source of origin, side of origin and distance from the point of origin of the artery to mid inguinal point of all three arteries were noted. Superficial external pudendal artery arises generally from femoral artery with preponderance from medial aspect and in almost equal cases within 3 cm and between 3.1 – 6.0 from point of origin to midinguinal point. Superficial epigastric artery arises from femoral artery in all cases with preponderance from anterior aspect of femoral artery and in almost all cases within 3 cm from point of origin to mid inguinal point. Superficial circumflex arises generally from femoral artery with preponderance from lateral aspect and in almost all cases within 3cm from the point of origin to mid inguinal point.

KEY WORDS: Superficial external pudendal artery, Superficial circumflex iliac artery, Superficial epigastric artery, Profundafemoris artery, Midinguinal point.



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INTRODUCTION

The importance of superficial external pudendal, superficial epigastric and superficial circumflex iliac arteries in cases of lower limb obstructive arteriopathies has been established by many authors.^{1,2} The SEPA flaps have been used in the repair of skin defect of the penile shaft after replacement of a prosthesis³, in the reconstruction of hand skin injuries^{4,5} and in vulvar reconstruction.⁶ The superficial branches of femoral artery radiates out from saphenous opening.

There are two literature describing anatomy of superficial external pudendal artery^{7,8} but no literature is available describing all the three arteries and therefore in this study we aimed to describe accurately, the source of origin, side of origin and distance from the point of origin to midinguinal point of SEPA, SEA and SCIA.

MATERIALS AND METHODS

In this study we dissected 40 femoral triangles in 20 adult properly embalmed cadavers preserved in 10% formaldehyde solution. The skin was incised and dissection of femoral were triangle carried out with utmost care to identify and trace the all three arteries.

The source of origin, side of origin and distance from the point of origin to midinguinal point of SEPA, SEA and SCIA were noted.

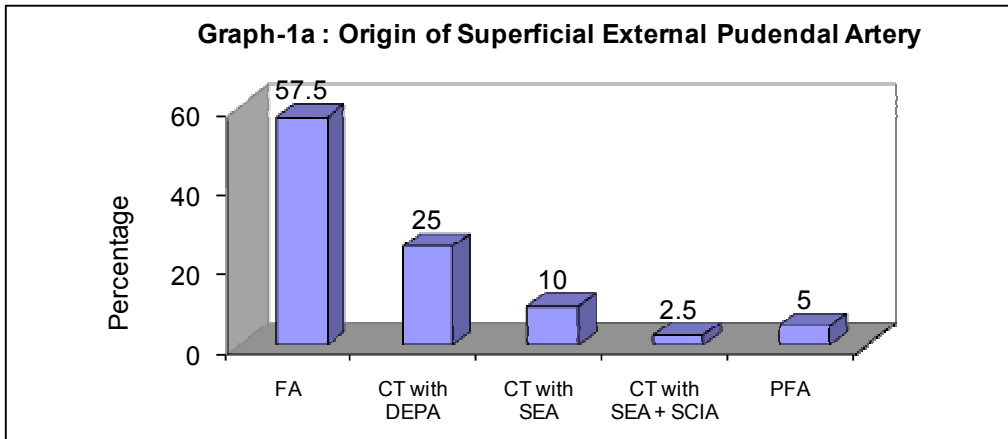
RESULTS

The superficial external pudendal artery arises from femoral artery as a separate branch in 23 cases (57.5%), from femoral artery by common trunk with deep external pudendal artery in 10 cases (25%), from femoral artery by CT with SEA in 4 cases (10%), from femoral artery

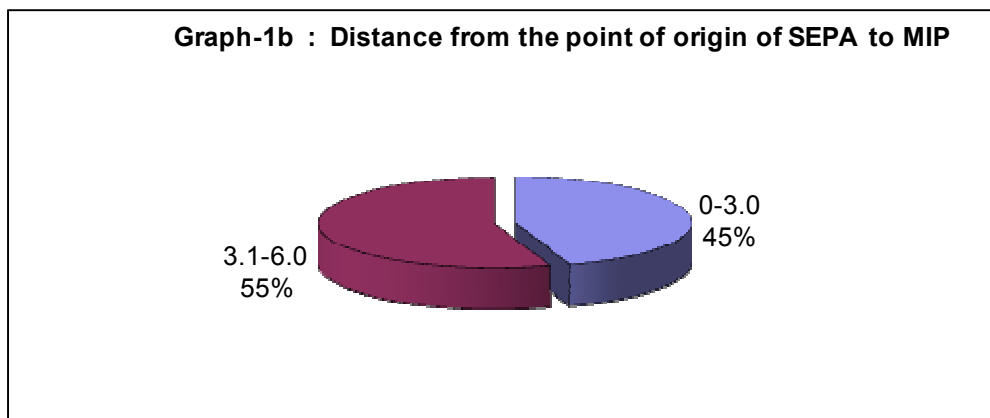
by CT with SEA and SCIA in 1 case (2.5%) and also arises from profunda femoris artery in 2 cases (5%). The SEPA arises from medial aspect in 27 cases (67.5%), from anterior aspect in 6 cases (15%), from anteromedial aspect in 4 cases (10%), from posteromedial, anterolateral and lateral aspect in one case each (2.5%). The distance from the point of origin of SEPA to midinguinal point is within 3 cm in 18 cases (45%) and between 3.1 to 6 cm in 22 cases (55%).

The SEA arises from femoral artery as a separate branch in 19 cases (47.5%), from femoral artery by CT with SCIA in 14 cases (35%), from FA by CT with SEPA in 4 cases (10%), from FA by CT with DEPA in 1 cases (2.5%), from FA by CT with SEPA and SCIA in 2 cases (5%). The SEA arises from anterior aspect of FA in 15 cases (37.5%), from anterolateral aspect of FA in 10 cases (25%), from medial aspect of FA in 5 cases (12.5%), from lateral aspect of FA in 7 cases (17.5%), from antero-medial aspect of FA in 2 cases (5%) and from posterolateral side of FA in 1 case (2.5%). The distance from the point of origin of SEA to MIP is within 3 cm in 35 cases (87.5%) and between 3.1 – 6.0 cm in 5 cases (12.5%).

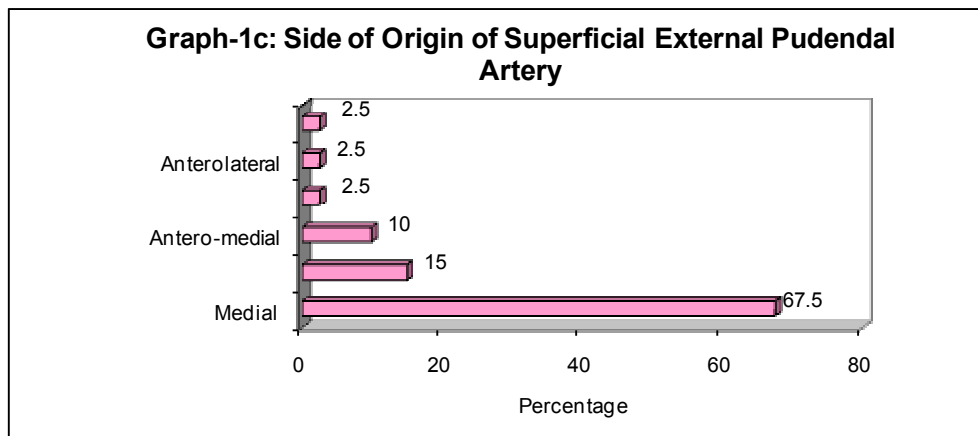
The SCIA arises from FA as a separate branch in 21 cases (52.5%), from FA by CT with SEA in 16 cases (40%), from FA by CT SEPA and SEA in 1 case (2.5%) and also arises from PFA in 2 cases (5%). The SCIA arises from lateral aspect of FA in 20 cases (50%), from anterolateral side in 9 cases (22.5%) from anterior side in 7 cases (17.5%), from anteromedial side in 1 case (2.5%), from posteromedial side of FA in 2 cases (5%) and from medial side of FA in 1 case (2.5%). The distance from the point of origin of SCIA to MIP is within 3 cm in 37 cases (92.5%) and between 3.1 – 6.0 cm in 3 cases (7.5%).



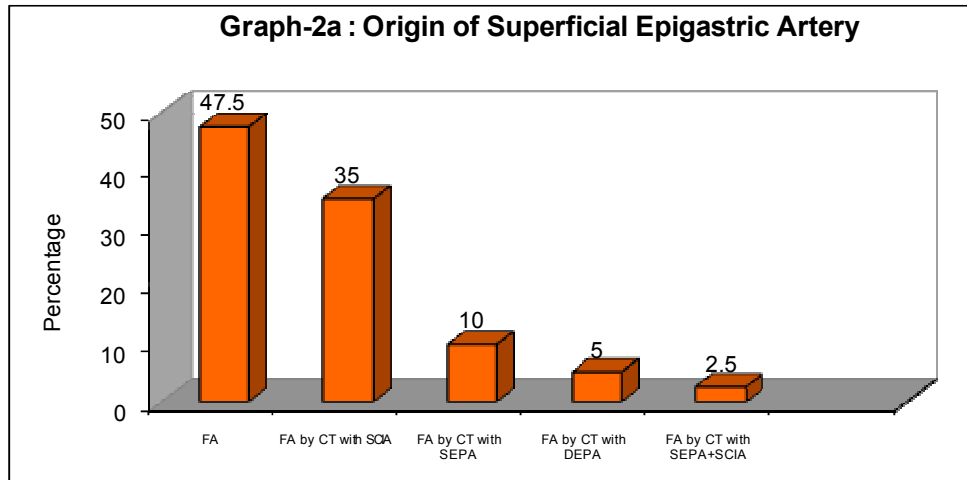
Graph – 1a



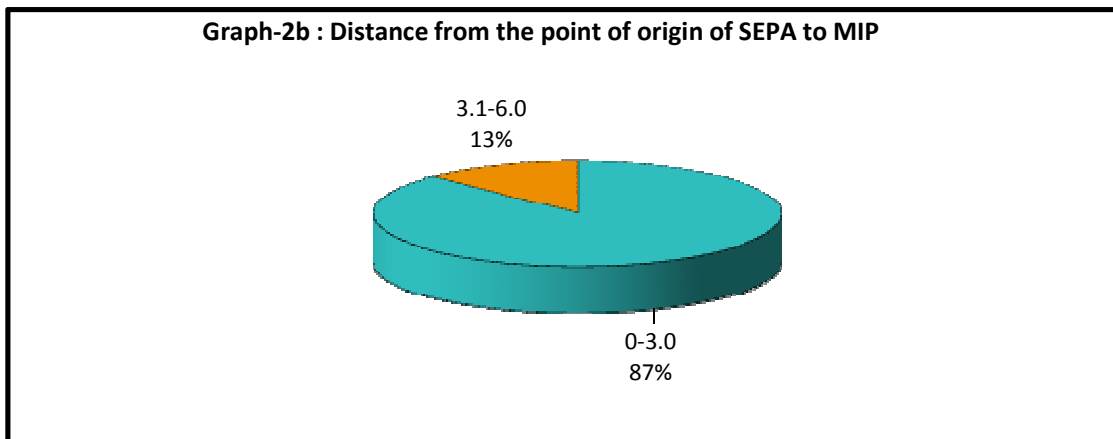
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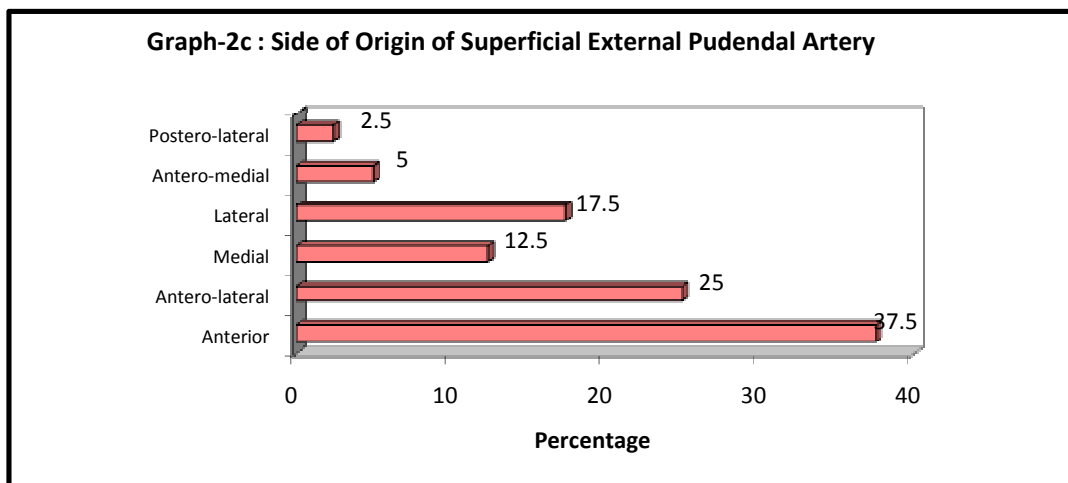
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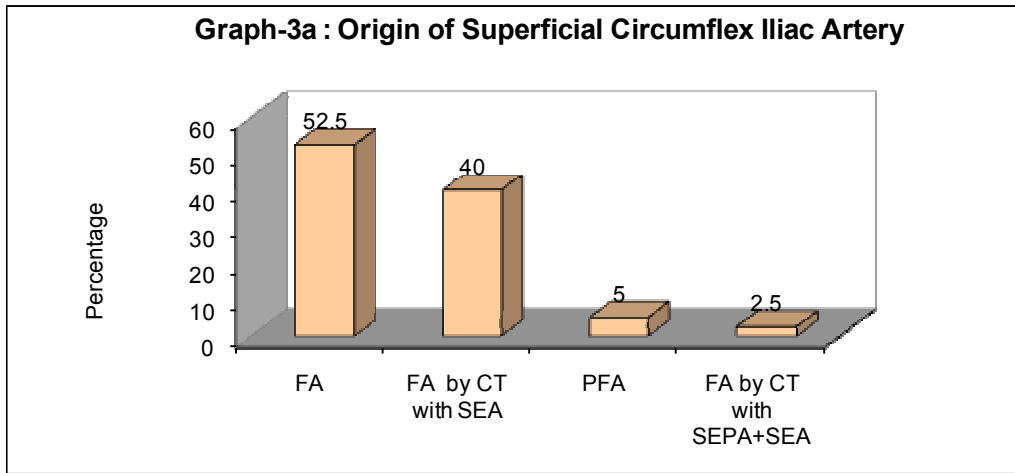
Graph – 2a



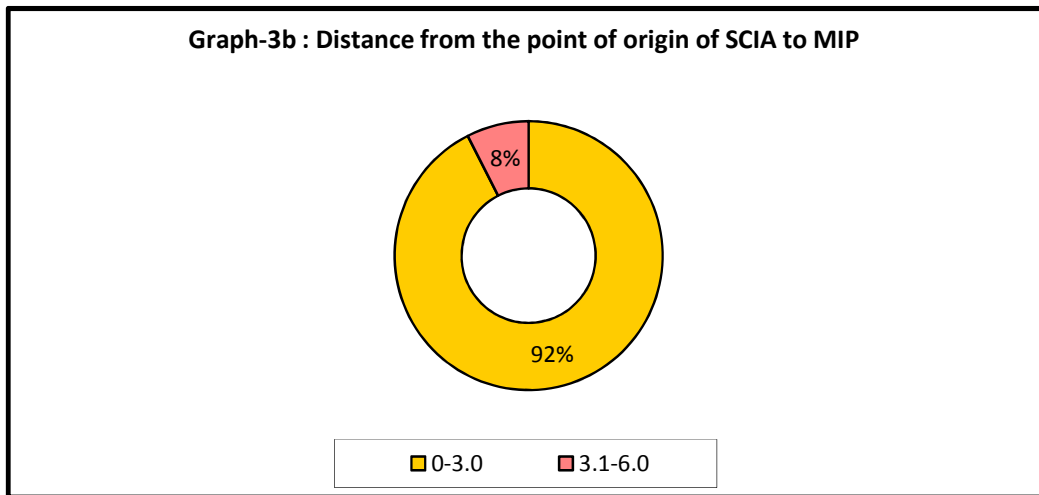
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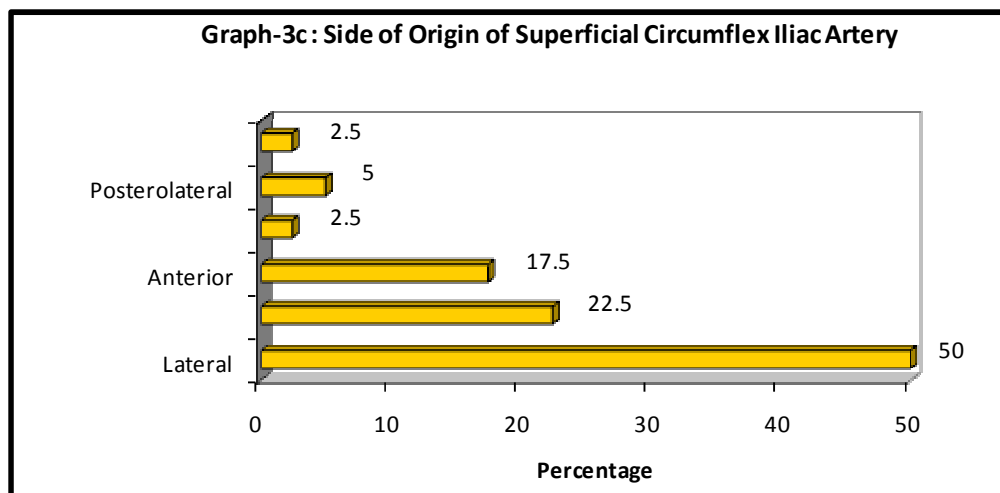
Graph – 2c



Graph – 3a



Graph – 3b



Graph – 3c

DISCUSSION

It is very important to understand anatomy of arteries that promote the vascularisation of fasciocutaneous pedicled flaps.^{7,9} However only two studies has been published on the SEPA but in this study along with SEPA, we described the other two arteries namely SEA and SCIA.

In the present study we found the SEPA, SEA and SCIA in all the 40 dissected specimens. The SEPA arises from FA as a separate branch in 23 cases (57.5%), arises from FA by CT with other arteries in 15 cases (37.5%) and also takes origin from PFA in 2 cases (5%). The distance from the point of origin of SEPA to MIP is within 3 cm in 22 cases (55%) and between 3.1 to 6.0 cm in 18 cases (45%).

Osvadir Lanzoni La Falceetal⁸ found SEPA in 46 of the 50 dissected sides. On 32 occasions as duplicated arteries and as single arteries on 14 occasions. In just one case, the artery did not originate from FA but rather from deep femoral artery. The same author also observed great variation

in the distance between artery and inguinal ligament i.e. from 0.8 cm to 8.5 cm.

In the present study the superficial epigastric artery, arises from FA as a separate branch in 19 cases (47.5%), arises from FA by CT with other arteries in 21 cases (52.5%). This artery did not arise from PFA. The distance from the point of origin of SEA to MIP is within 3 cm in 35 cases (87.5%).

In the present study, the SCIA arises from FA as a separate branch in 21 cases (52.5%) arises from FA by CT with other arteries in 19 cases (47.5%). This artery also arises from PFA in two cases (5%). The distance from the point of origin of SCIA to MIP is within 3 cm in 37 cases (92.5%).

The results of this study increase our knowledge of the anatomy of three superficial branches of FA in femoral triangle. This knowledge is considered to be very essential in preliminary step in clinical research.

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