



ELSEVIER



# Extending the use of the gracilis muscle flap in perineal reconstruction surgery



Stephen J. Goldie <sup>a,\*</sup>, Riyadh Almasharqah <sup>a</sup>,  
Quentin A. Fogg <sup>b,c</sup>, William Anderson <sup>a</sup>

<sup>a</sup> Department of Plastic Surgery, St John's Hospital, Howden Road West, Howden, Livingston, West Lothian, Scotland, EH54 6PP, United Kingdom

<sup>b</sup> Laboratory of Human Anatomy, School of Life Sciences, University Avenue, University of Glasgow, Glasgow, Scotland, G12 8QQ, United Kingdom

<sup>c</sup> Centre for Human Anatomy Education, Department of Anatomy and Developmental Biology, 19 Innovation Walk, Monash University, Melbourne, 3800, Australia

Received 25 January 2016; accepted 1 May 2016

## KEYWORDS

Gracilis myocutaneous flap;  
Perineal reconstruction;  
Anatomy;  
Pedicle length

**Summary** Reconstruction of the perineum is required following oncological resections. Plastic surgical techniques can be used to restore the aesthetics and function of the perineum. The gracilis myocutaneous flap provides a substantial skin paddle, with minimal donor site morbidity. The flap is pedicled on a perforator from the medial circumflex femoral artery, giving it limited reach across the perineum. Tunnelling the flap under the adductor longus muscle may free up more of the arterial pedicle, increasing its reach.

On three female cadavers, bilateral gracilis flaps were raised in the standard surgical manner, giving six flaps in total. With the flaps pedicled across the perineum, the distance from the tip of each flap was measured to the anterior superior iliac spine (ASIS). The flaps were then tunnelled under the adductor longus muscle. The distances to the ASIS were measured again.

The average pedicle length was greater than 7 cm. Tunnelling the flap under the adductor longus muscle increased the reach by more than 4 cm on average.

Cadaveric dissection has shown that tunnelling of the flap in a novel way increase its reach across the perineum. This additional flexibility improves its use clinically and is of benefit to plastic surgeons operating in perineal reconstruction.

© 2016 British Association of Plastic, Reconstructive and Aesthetic Surgeons. Published by Elsevier Ltd. All rights reserved.

\* Corresponding author.

E-mail address: [Stephen\\_goldie@hotmail.com](mailto:Stephen_goldie@hotmail.com) (S.J. Goldie).

## Introduction

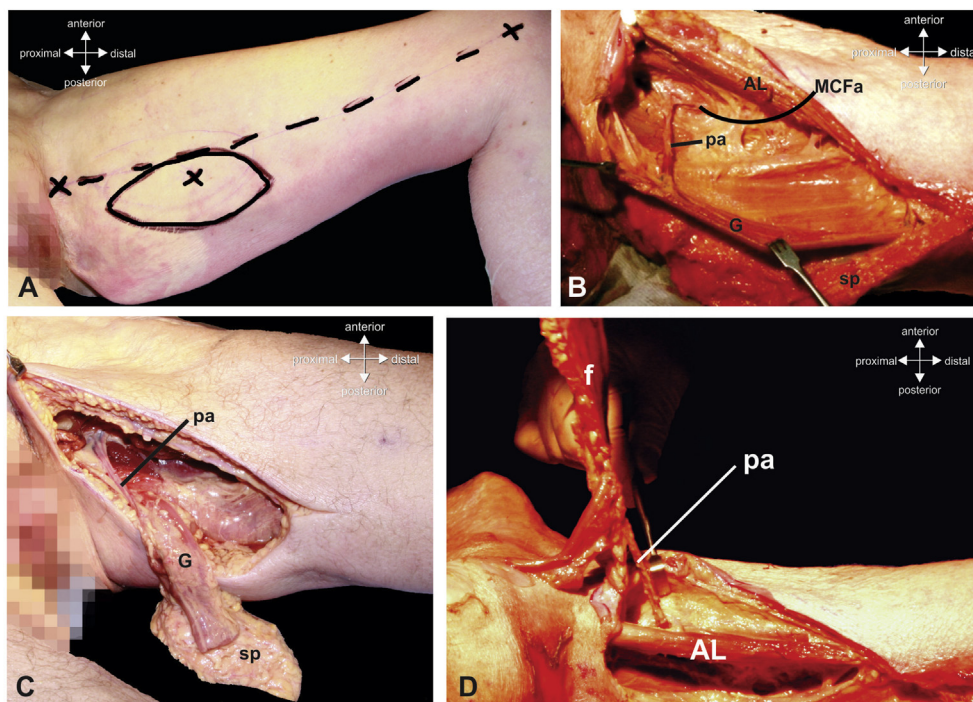
Reconstruction of the perineum is required following oncological resections. Plastic surgical techniques can be used to restore the aesthetics and function of the perineum. McCraw et al. (1976) first described use of the myocutaneous gracilis flap for reconstruction of the vagina.<sup>1</sup> Further anatomical injection studies helped to more clearly define the vascular supply and drainage of the flap.<sup>2,3</sup> More recently authors have developed an algorithmic approach to deciding which surgical procedures are best for reconstructing defects of increasing size and complexity, due to factors like previous adjuvant therapies.<sup>4</sup> They recommend use of either using a gluteal fold flap or gracilis flap in the reconstruction of medium sized perineal defects (20–60 cm<sup>2</sup>) resulting from resection of vulval, vaginal or ano-rectal malignancies. The gracilis myocutaneous flap provides a substantial skin paddle, with minimal donor site morbidity.<sup>5</sup> The flap is pedicled on a perforator from the medial circumflex femoral artery, giving it limited reach across the perineum.<sup>1</sup> Clinically it was felt that additional pedicle length could be gained by manoeuvring the flap under the adductor longus muscle. We hypothesise that tunnelling the flap under adductor longus muscle may free up more of the arterial pedicle, increasing its reach across the perineum.

## Materials & methods

Bilateral myocutaneous gracilis flaps were marked (Figure 1) and raised surgically on three female unembalmed cadaveric donors, allowing measurement of six flaps in total. Flaps were placed onto the perineum, pointing the distal tip of the skin paddle to each anterior superior iliac spine (ASIS) in turn. Care was taken to ensure they were at their maximum reach, but not under tension. The following measurements were made from each flap when pedicled across the perineum in the standard fashion:

- Pedicle length (from the branching point of the vessel to the flap)
- Distance from the tip of skin paddle to the ipsilateral ASIS
- Distance from the tip of skin paddle to the contralateral ASIS.

Flaps were then tunnelled under the adductor longus muscle and the measurements listed above were recorded again. Distances were measured using sliding callipers. The length of reach gained was calculated by subtracting the measurements recorded once the flaps had been tunnelled from the initial measurements taken in the standard position. Digital photographs were taken of all measurements.



**Figure 1** Medial view of the simulated surgical dissection of the gracilis flap pedicle. A – Surgical marking of the gracilis flap on the medial aspect of the left thigh of an unembalmed female cadaveric donor. B – Anterior retraction of the adductor longus muscle (AL) and posterior retraction of the gracilis muscle (G) permits direct observation of the pedicle artery (pa) branching from the medial circumflex femoral artery (MCFa). The skin paddle (sp) is pushed posteriorly in this view. C – Medial view of the simulated surgical dissection of the gracilis flap pedicle. The pedicle artery (pa) was dissected to the entrance point on the gracilis muscle (G). The skin paddle (sp) islanded over this area is also visible. D – Medial view of the simulated surgical dissection of the gracilis flap pedicle. The gracilis myocutaneous flap (f) and the pedicle artery (pa) have been passed posterior to the adductor longus muscle (AL), freeing the full length of the pedicle artery for maximum reach. ASIS – anterior superior iliac spine.

Download English Version:

<https://daneshyari.com/en/article/4117016>

Download Persian Version:

<https://daneshyari.com/article/4117016>

[Daneshyari.com](https://daneshyari.com)