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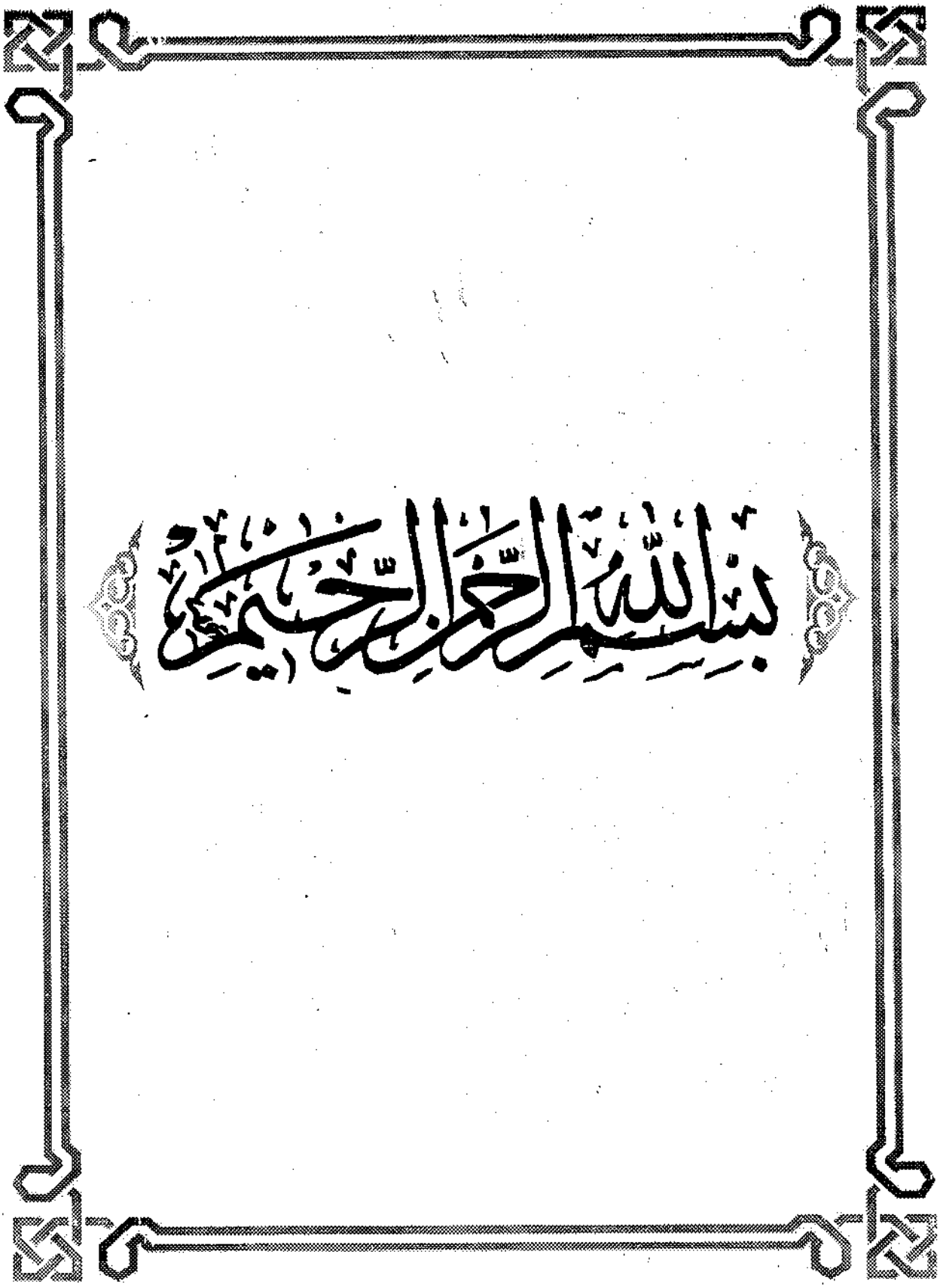
بسم الله الرحمن الرحيم

AN ANATOMICAL STUDY OF THE GLUTEAL AND LUMBAR PERFORATOR-BASED FLAPS AND ITS APPLICATIONS

Thesis

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By

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CONTENTS

ABBREVIATION

ASIS	Anterior superior iliac spine
Gd	Gluteus medius muscle
Gn	Gluteus minimus muscle
GT	Greater trochanter
Gx	Gluteus maximus muscle
IGA	Inferior gluteal artery
IP	Internal pudendal artery
LCF	Lateral circumflex femoral artery
Ld	Latissimus dorsi muscle
LS	Lateral sacral artery
PF	Profunda femoris artery
PSIS	Posterior superior iliac spine
SGA	Superior gluteal artery

Introduction

INTRODUCTION

Over the last two decades there has been an anatomic renaissance that has seen reconstructive flap surgery escape from the geometric trails of the past. No longer flaps are planned in a random manner or restricted by the length-to-breadth ratios, in the hope that they will encompass in their attached margin significant and sizable vessels.

Instead, flaps whether skin, muscle, tendon, bone or combinations are based usually on known vessels, especially when harvested for microsurgical free transfer.

There has been great advances in flap surgery in the last few decades achieved by a reappraisal of the works of past anatomists, by new studies involving various cadavar dissection, injection, radiographic and corrosion cast techniques; and with the aid of angiography and the doppler ultrasonography in clinical cases. The introduction of tissue expansion, free flap and perforator based flap techniques and revaluation of the anatomic changes that occur sequentially following flap delay have further broadened the scope of flap surgery.

HISTORICAL REVIEW

In 1975, Fujino et al[1] were the first to use gluteal soft tissue as a free flap. Despite the initial enthusiasm and the popularity of the technique, the paucity of publications, limited series of patients and the surgical complexity and complications which have been experienced delayed the wide use of the technique.

In 1977, Mc Craw and Dibell[2] stated that the skin, as a rule, is supplied by the perforating vessels arising perpendicularly from the subjacent muscle and that the vessels arborize in perifascial layer to form the plexus around the fascial layer.

Later in the same year, Minami et al[3] utilized gluteus maximus myocutaneous flaps for repair of pressure sores.

In 1978, McCraw et al[4] were successfully able to repair major defects of the chest wall with the latissimus dorsi myocutaneous flap.

In 1980, Bostwick and Scheflan[5] introduced the reverse latissimus dorsi myocutaneous flap. The blood supply for these flaps is derived from the lumbar arteries.

In 1981, Haertesch[6] demonstrated by microangiography the presence of a vascular network above the deep fascia in the limbs and suggested that the plexus was nourished by the perforating arteries running through the intermuscular septum. These perforating arteries could nourish only a small area of the skin on account of its fine structure, and a method to obtain a flap by elevating several vessels of

the perforating artery together with the original segmental artery was developed. This was called the septocutaneous artery flap.

In 1982, Ponten[7] elevated a local flap including the deep fascia in the leg and named it the fasciocutaneous flap.

In 1983, Tolhurst and Haeseker[8] followed through the Ponten's technique and utilized fasciocutaneous flaps successfully in many clinical applications.

In 1984, Ramirez et al[9] introduced the sliding gluteus maximums myocutaneous flap for coverage of sacral pressure sores. The gluteal pedicles have a length of 4 cm, so that a medial transposition of muscle mass of about 4 cm is the maximum to be expected. A few years later, the same author commented that the flap is contraindicated when the defect reaches the vicinity of the gluteal pedicles.

In the same year, Lamberty and Cormack[10] found out that some vessels emerging from the intermuscular septum to enter the subcutaneous tissue form a plexus at the level of the deep fascia. They called this the fasciocutaneous system, regarding it as the base for the circulation to the fasciocutaneous flap.

In the first half of the eighties, there has been an abundance descriptions of free myocutaneous flaps based on long, named vessels. Indeed, almost any muscle can become a flap if it has a blood supply that can be surgically isolated as a pedicle.[7]