ARTHROSCOPIC TREATMENT OF ANTEROLATERAL SOFT TISSUE IMPINGEMENT OF THE ANKLE

Thesis

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By

Mohamed Gomaa
(M.B., B.Ch, M.Sc in. Orthopaedics)

Supervised By

Prof. Dr. **EMAD EL-DIN HALAWA**
Professor of Orthopaedics
Faculty of Medicine, Cairo University

Prof. Dr. **AHMED ABDEL AZIZ**
Professor of Orthopaedics
Faculty of Medicine, Cairo University

Prof. Dr. **ALAA ELDIN MOHY ELDIN SOLYMAN**
Professor of Orthopaedics
Faculty of Medicine, Cairo University

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Cairo University
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Abstract

Anterior soft-tissue impingement, or anterolateral impingement of the ankle, is believed to be caused by one or more inversion injuries to the ankle joint. The pain is usually anterolateral and persists despite adequate rest, healing, and rehabilitation. An inversion sprain may result in posttraumatic synovitis with synovial thickening and effusion. The term “meniscoid lesion” has been used to describe entrapment of a mass of hyalinized tissue between the talus and the fibula during ankle motion.

Injured ankle ligaments will form scar tissue while healing. This scar tissue is tighter, and less organized when patients have their joint completely immobilized. The ligaments heal with tissue that is the appropriate length and of better quality when ankle movement is initiated earlier. When the ligaments scar excessively, normal movements can become painful, and the ankle can be prone to re-injury.

Key Words:

Anatomy, Pathology, Examination and Diagnosis,

Acknowledgement

To my parents,

To my father who taught me a lot without teaching me.

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LIST OF ABBREVIATIONS

AAM	Accessory anteromedial
AC	Accessory anterolateral
ACL	Anterior cruciate ligament
ADL	Activities of daily living
AITFL	Anterior inferior tibio fibular ligament
AL	Anterolateral
AM	Anteromedial
AP	Antero posterior
ATFL	Anterior talo fibular ligament
CC	Cubic centimeter
CFL	Calconeo fibular ligament
CT	Computed tomography
FHL	Flexor hallucis longus
LTM	Lateral trans malleolar
MRI	Magnetic resonance imaging
MTM	Medial trans malleolar
NASIDs	Non steroidal anti-inflammatory drugs
PL	Postero lateral
PM	Postero medial
ROM	Range of motion
SPN	Superficial peroneal nerve
TAT	Trans Achilles tendon
3D	Three dimensional

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INTRODUCTION

The first arthroscopic inspection of a cadaveric joint was apparently performed in Japan by ***Takagi*** *in 1918.* In 1939, he reported on an arthroscopic examination of an ankle joint. In New York, in 1931, ***Burman*** reported an experimental study on the arthroscopic exploration of cadaveric joints, but he believed that the ankle joint was unsuitable for such techniques because it was too narrow and a posterior puncture was not feasible.

In 1985 ***Chen*** described the operative anatomy of the ankle on the basis of his experience with sixty-seven arthroscopies of that joint. Subsequently, major technological advances in video cameras, fiberoptic light transmission, instruments for use in small joints, and distraction of the joint by invasive and non-invasive means, combined with a sound knowledge of safe anatomical portals, have resulted in an improved ability to perform diagnostic and operative arthroscopy in the ankle ***(Ferkel, 1999)***.

Arthroscopic examination of the ankle joint permits direct visualization and palpation of all intra articular structures, without the morbidity of extensive surgical exposure. Dynamic correlations of the mechanisms of injury, is also possible by viewing the joint in motion and under applied stress intra operatively. The chondral surfaces and soft tissue structures, including, synovium, ligaments and capsule, can be directly assessed. Small joint arthroscopic

instrumentation enables the surgeon to perform numerous surgical procedures ***(Cerulli et al 1992)***.

Ankle arthroscopy has evolved to become an important tool in the treatment of several types of ankle disorders.

Anatomy

A. GROSS ANATOMY

Familiarity with surface anatomy and soft tissue structures of the ankle is imperative if complications are to be avoided during arthroscopy. Neurovascular structures and tendons are at risk if portals are improperly placed. This chapter reviews the topical anatomy as it pertains to arthroscopic approaches.

The neurovascular structures, tendons, ligaments, and plicae of the ankle are then reviewed ***(Mason and Morgan, 2004)***.

1. Surface Anatomy of the Ankle

The anterior joint line is superficial and palpable, being separated from skin only by the subcutaneous layer, extensor tendons, anterior neurovascular structures, and the anterior capsule. The lateral aspect of the anterior joint line is found just lateral to the peroneus tertius tendon and just above the palpable lateral trochlear ridge of the talus. The medial side of the joint is identified by palpating the soft spot just medial to the anterior tibial tendon and inferior to the proximal corner of the medial malleolus (Figs.1a, b). In contrast, the posterior tibiotalar joint is not easily palpated owing to 3–4 cm of thick fibro adipose tissue located between the Achilles tendon and the flexor tendons of the foot. ***(Mason and Morgan 2004)***

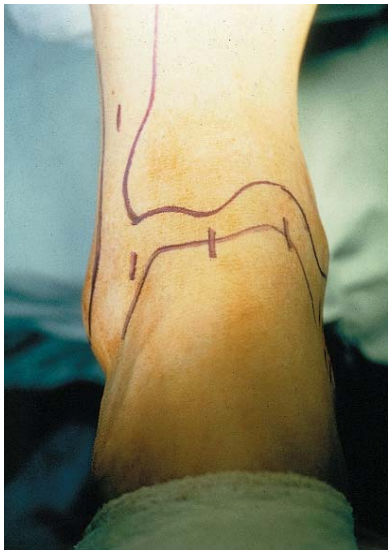

Fig. 1a: Anterior surface anatomy of the right ankle with the anterior portals marked. ***(Mason and Morgan 2004)***

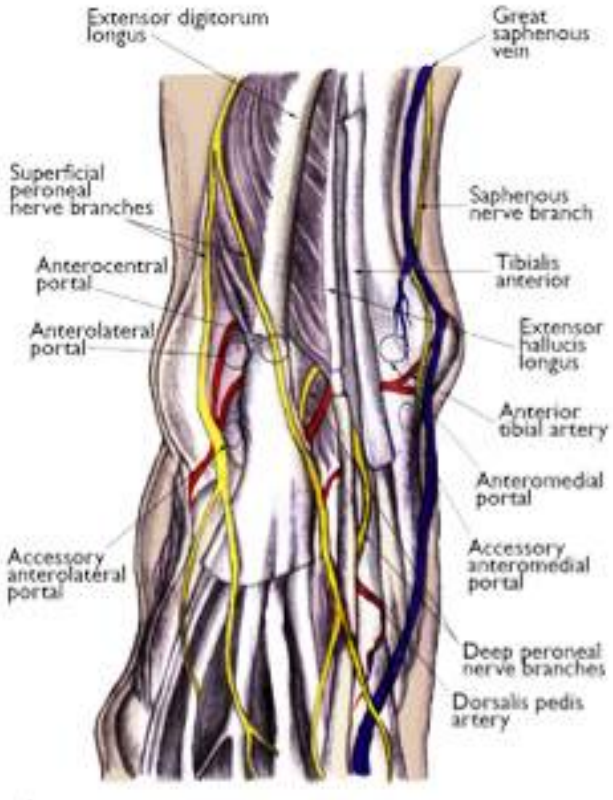

Fig 1b: Diagrammatic anatomy and anterior portals. ***(Mason and Morgan 2004)***