

بسم الله الرحمن الرحيم



HOSSAM MAGHRABY



شبكة المعلومات الجامعية التوثيق الالكتروني والميكروفيلم



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جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

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لم ترد بالأصل



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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

**WATER ENEMA AS CONTRAST MATERIAL FOR
COMPUTED TOMOGRAPHY EXAMINATION OF
THE RECTUM.**

BIERKI

Thesis

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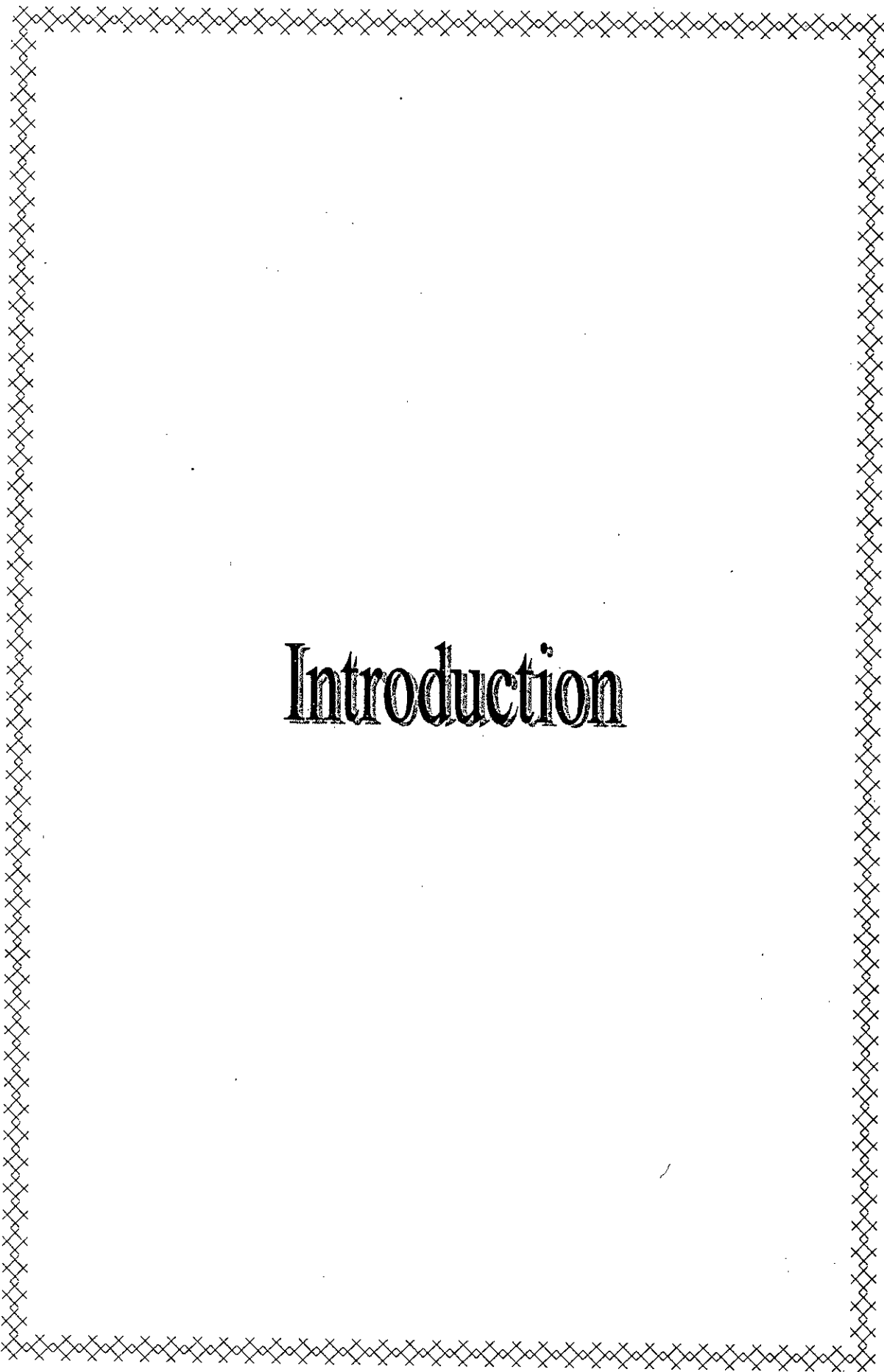
It would not have been possible to conduct this study without the blessing of **GOD** and the help of my supervisors who have given me ideas, valuable comments and inspiration.

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Introduction

INTRODUCTION

Gross Anatomy of the rectum:

The rectum begins as the continuation of the sigmoid colon on the pelvic surface of the third piece of the sacrum. It is approximately 12-15 cm long; first it follows the curve of the sacrum and coccyx. It then runs antero-inferiorly to the central perineal tendon, lying on the anococcygeal ligament and the parts of the levator ani muscles passing to that ligament. It ends by turning postero-inferiorly as the anal canal, 2-3 cm from the tip of the coccyx and immediately posterior to the central perineal tendon and to the apex of the prostate in the male. ⁽¹⁾

The rectum has three lateral curvatures: The upper and the lower are convex to the right while the middle is convex to the left, on the mucosal aspect these three curves are marked by semicircular folds (Houston's valves). The part of the rectum that lies below the middle valve has a much wider diameter than the upper third and it is known as the ampulla of the rectum. ⁽²⁾ Fig (1)

In spite of its name, the rectum is not straight. In the sagittal plane it follows the curve of the sacrum and coccyx. In the coronal plane it is S-shaped with an increasing curvature inferiorly.

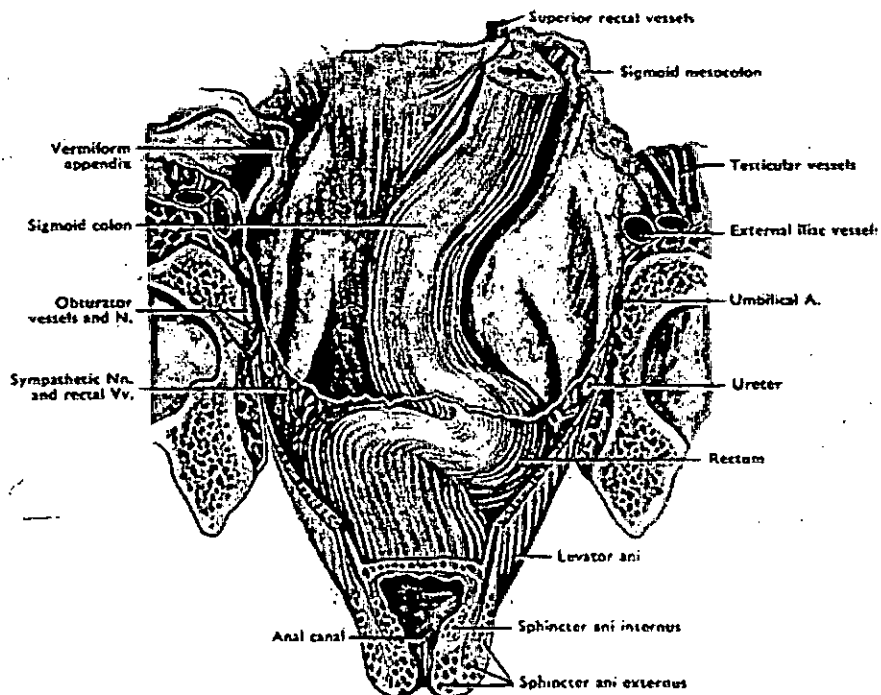


Figure (1). A section of the demonstrating the anatomy of the rectum from the front.

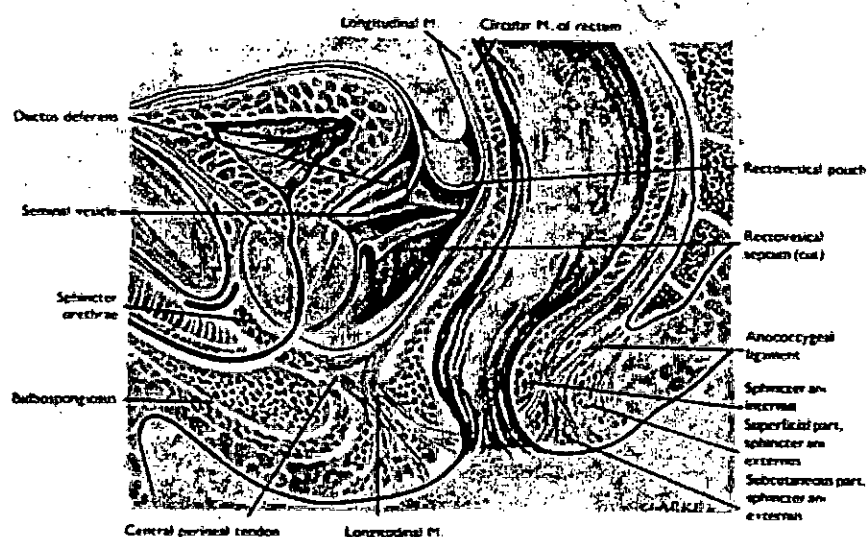


Figure (2). A median section of the male pelvis.

The peritoneum covers the front and sides of the upper third of the rectum, and gradually passing forwards, turns off the front of the rectum at the junction of its middle and lower thirds to form the floor of the recto-vesical or recto-uterine pouch and pass on the back of the bladder (male) or the posterior fornix of the vagina (female). Thus the upper two-thirds of the rectum are in contact anteriorly with coils of sigmoid colon and ileum. The lower third is separated, in the male, from the base of the bladder by the seminal vesicles and deferent ducts and from the prostate by recto-vesical septum, in the female, from the vagina by loose areolar tissue⁽¹⁾ Fig (2)

Posteriorly, the rectum is separated only by a layer of pelvic fascia from the sacrum, coccyx, and anococcygeal ligament in the median plane, and on each side, it is separated from these structures by muscles which are piriformis, coccygeus, and levator ani. Between these structures and the pelvic fascia are the median sacral vessels, and the sympathetic trunk on each side. Lateral to these are the lateral sacral vessels and the lower sacral coccygeal nerves.⁽¹⁾

Laterally, the rectum is in contact with the peritoneum superiorly and inferiorly with the fat and fascia over coccygeus and the levator ani muscles. Some of this fascia, condensed around the

middle rectal artery, passes to the fascial sheath of the rectum and helps to hold it in position. ⁽¹⁾

The lowest part of the rectum is separated by a fascial condensation known as Denonvilliers' fascia that separates it from the prostate in front. Posteriorly the rectum is separated from the coccyx and the two last sacral vertebrae by another fascial layer called Waldeyer's fascia. This presacral fascia extends downwards and forwards on the upper aspect of the anococcygeal ligament to fuse with the fascia propria of the rectum at the anorectal junction. These fascial layers are important, as they are barriers to the malignant penetration. ⁽³⁾

Cross sectional anatomy of the rectum: ⁽⁴⁾

The mucosal margin of the colonic wall is usually smooth; being well outlined by contrast material or air. The outer colonic margin is sharply outlined by the surrounding pericolonic fat. Inflammation or congestion adjacent to the colonic wall increases the CT density of the pericolonic fat, thereby diminishing the sharpness of the outer colonic margin. Direct extension of tumor into the prercolonic fat may have a similar appearance.