FOLLOW UP STRATEGIES OF THE DIFFERENT URINARY TRACT MALIGNANCIES

Essay
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INTRODUCTION

Genitourinary cancers account for a large proportion of the reported cancer cases. If we exclude gynecologic malignancies, urinary malignancies accounted for 24% of all newly diagnosed cancers and 10% of all cancer deaths in 2003, with genitourinary malignancies in males accounting for 43% of all new cases and 16% of all cancer related deaths *(Jemal et al., 2003)*.

In an effort to improve the quality of patient care, there has been a movement towards practicing evidence-based medicine. Evidence based practice guidelines for the treatment of urinary malignancies have been established through the American Urological Association Guideline Panels and the National Comprehensive Cancer Network (NCNN) and are available to the practicing urologist *(Scher et al., 2003)*.

There are no prospective analysis evaluating the efficacy of follow-up strategies or intervals for urinary malignancies. Most post-therapy surveillance schedules are proposed on the basis of retrospective

reviews of the risks and patterns of tumor recurrence based on the primary treatment received. Therefore, the recent literatures contain many proposals for follow-up strategies for urinary malignancies, not all of which are in complete agreement *(Evans, 2002)*.

The main objective of any follow-up schema is to detect the development of tumor recurrence or new primary early enough to render effective treatment and improve outcome. A secondary objective is to monitor the patient for any treatment related complications or the development of secondary malignancies related to the primary treatment, which most current follow-up strategies do not include. Primary components of a follow-up strategies are radiographic imaging, laboratory and/or serologic markers and physical examination. A rational follow-up schema will consider biological features of the tumor and treatment approaches which also impact recurrence rates and sites *(Evans, 2002)*.

Retrospective follow-up data provide valuable information about the risk of local or distant tumor recurrence, the pattern or sites of recurrence, the most likely time for recurrence or development of a new primary, and the type and frequency of benign

treatment related complications or secondary malignancies relative to the initial stage and grade of the tumor and primary treatment given *(Theodroescu et al., 2004)*.

AIM OF THE ESSAY

To give the reader (urologist) an up to date knowledge on the different most accepted methods of follow-up of different urinary tract malignancies.

Chapter 1

SURGICAL ANATOMY OF THE URINARY SYSTEM

Surgical anatomy of the kidney

Extraperitoneal Compartments and Perirenal Fasciae:

The extraperitoneal compartment can be divided into the anterior pararenal space, perirenal space, and posterior pararenal space. The anterior pararenal space extends from the posterior parietal peritoneum to the anterior renal fascia and is confined laterally by the lateroconal fascia. It includes the ascending and descending colon, duodenal loop, and pancreas. In the perirenal space, each kidney is surrounded by a layer of fat that is covered by Gerota's fascia (Fig. 1) *(Drake et al., 2005)*.

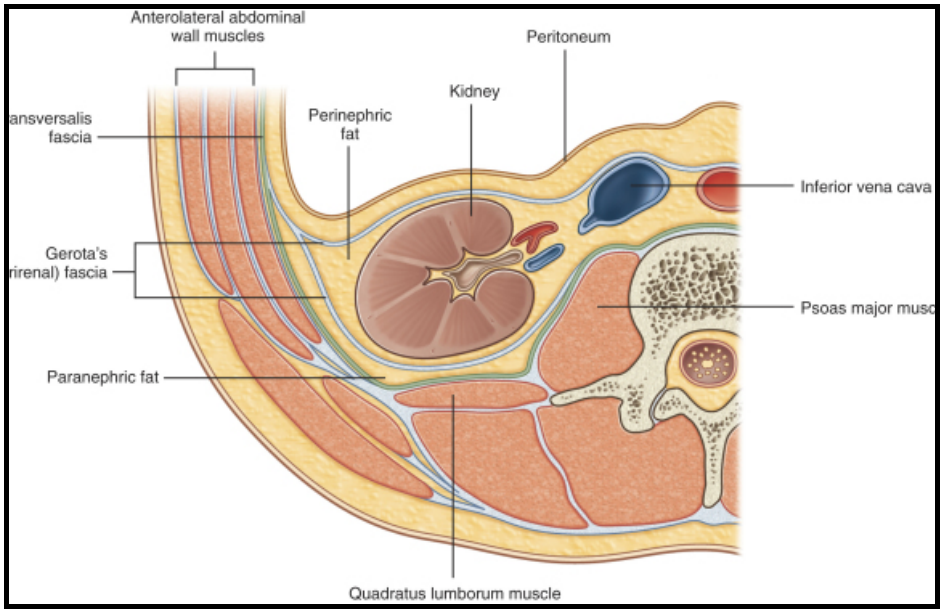

Fig. (1): Transverse section, showing the relations of the renal fascia. *(Drake et al., 2005)*

This fascia is completely fused superolaterally to the kidney, whereas medioinferiorly, fusion may be incomplete. This incomplete fusion is of clinical importance in determining the possible routes of spread of bleeding or infection around the kidneys. Both layers of Gerota's fascia probably continue across the midline, with the posterior layer crossing behind the great vessels, whereas the anterior layer extends in front of the great vessels. The parietal peritoneum fuses with the anterior layer of Gerota's fascia to form Toldt's line (Fig. 2) *(Tobin et al., 2000).*

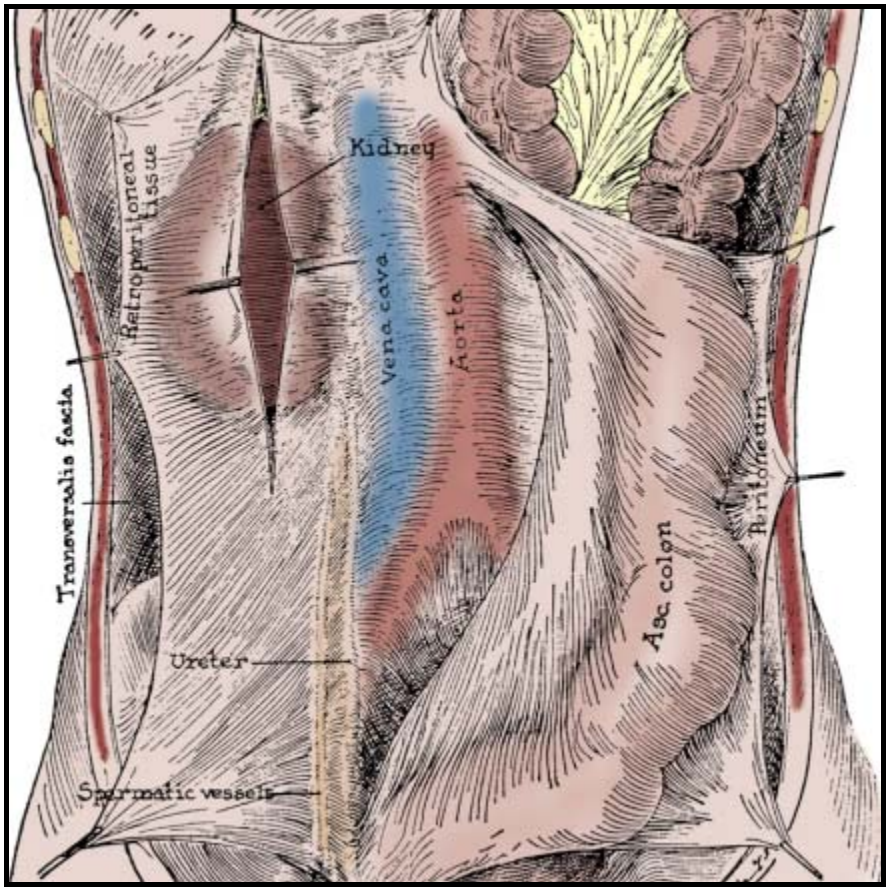

Fig. (2): The ascending colon and overlying peritoneum have been reflected medially by incision along Toldt's line *(Tobin et al., 2000)*.

The posterior pararenal space is limited medially by the fusion of the transversalis fascia with the psoas muscle fascia. It is open laterally and inferiorly. A potential communication exists between this space on each side of the body by the properitoneal fat of the anterior abdominal wall, deep to the transversalis fascia. Unlike the other two

spaces, this space contains no organs *(Rizk et al., 2000)*.

Anatomic Relationships

The upper pole of the left kidney lies at the level of T12, and the lower pole, at the level of L3. The right kidney usually extends from the top of L1 to the bottom of L3. Because of the free mobility of the kidneys, these relationships change with body position and respiration *(Resnick et al., 2001)*.

The right adrenal gland covers the uppermost part of the anteromedial surface of the right kidney. The anterior relationships of the right kidney include the liver, which overlies the upper two thirds of the anterior surface, and the hepatic flexure of the colon, which overlies the lower one third. The right renal hilum is overlaid by the second part of the duodenum. The anterior surface of the kidney beneath the liver is the only area covered by peritoneum *(Resnick et al., 2001)*.

The anteromedial surface of the left kidney is also covered by the left adrenal gland in its uppermost part. The spleen, body of the pancreas, stomach, and splenic flexure of the colon are all in an anterior relationship to the left kidney. The area of the kidney

beneath the small intestine, spleen, and stomach is covered by peritoneum (Fig. 3) *(Mitchell et al., 2000)*.

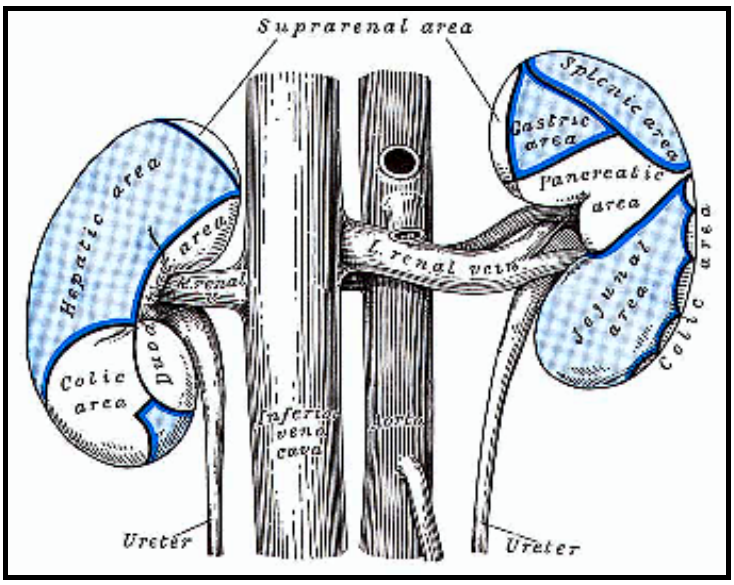

Fig. (3): The anterior surfaces of the kidneys, showing the areas related to neighbouring viscera. Areas coloured pale blue are separated from adjacent viscera by the peritoneum *(Mitchell et al., 2000)*.

Renal Blood Supply

Arterial Supply:

Each kidney is classically supplied by a renal artery and a larger renal vein arising from the aorta and the inferior vena cava, respectively, at the level of L2, below the takeoff of the superior mesenteric artery.The main renal artery divides into five segmental arteries at the renal hilum. Each segmental artery is an end artery, so occlusion leads to ischemia