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Radical Nephrectomy through Total Median Laparotomy

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Twenty-two carcinoma patients aged less than 65 years were subjected to radical nephrectomy through total median laparotomy. This type of approach provides excellent access to both essential operation phases: vessel management and lymphadenectomy. Postoperative abdominal complications and hernia have not been encountered.

The last ten years of domestic and foreign medical reports have been practically unanimous in assigning primary importance to radical ablastic surgery as a means to deal in the adult with malignant renal tumours of parenchymal origin [2, 8, 10]. Effective chemotherapeutics are lacking and radiotherapy results are unsatisfactory [4]. Also hormone therapy, ardently welcomed at first, proved soon unable to improve the five-year survival rate. Many authors call the use of whatever adjuvant therapy into question and believe that the fate of a renal carcinoma patient is really decided on the operating table, since accurate staging – a prerequisite for delimiting the necessary degree of radicality – can be established even under the latest of contemporary diagnostic methods only after surgery. Particularly scanty and inaccurate is the information concerning tumorous invasion of a lymph node, whereas this type of metastasis affects the survival expectancy heavier than may a tumour thrombus in the vena cava [1, 3]. Thus, the operation should be as

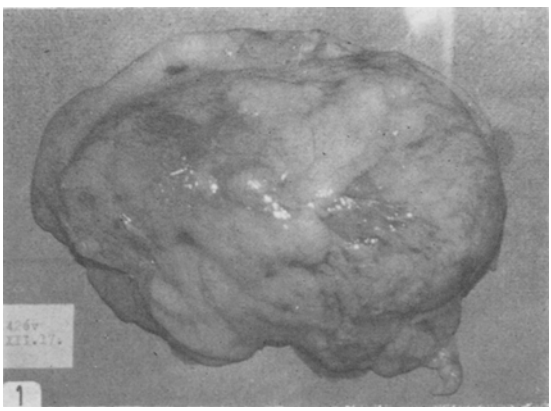

Fig. 1. Kidney removed together with adrenal, fatty capsule and intact Gerota's fascia

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radical as possible, which generally means removal of the kidney *en bloc* together with the fatty capsule, adrenal and intact Gerota's fascia, when the vessels have primarily been taken care of (Fig. 1). The vessels branching from the aorta to feed the adrenal and those from the cava are clamped, as are also the testicular (ovarian) artery and vein. We join those who attach little importance to removing the peritoneal plate covering the kidney. The ureter is preferably resected at least as far as the iliac crossing, since it would be pointless to retain a dispensable organ which may ultimately turn into a source of infection. Cases of ureteral carcinoma after radical nephrectomy have in fact been reported [6]. Diagnostically and therapeutically important, being an essential part of the operation, is the ipsilateral nephradenectomy, extending from the diaphragmatic crus as far as the bifurcation [7].

Material and method

Total median laparotomy for radical nephrectomy was performed in the course of two years (1986/87) in 22 patients whose distribution by staging is given in Table 1. The incision is conducted from the xiphoid process to the symphysis, by-passing the navel from the left. The ligamentum teres hepatis, if short, must be dissected lest it should hinder the liver to be held cranially away. The intestines are lifted by means of wet abdominal tampoons and spread in the right thorax. The choice of place for the retroperitoneal access depends on whether the tumour is located on the right or left side.

For a left-side tumour, the access route assumes the shape of an obtuse angle, with the Treitz ligament as vertex, one shank parallel to the inferior mesenteric vein and the other shank proceeding in left lateral direction, to cross the inferior mesenteric vein which is dissected and clamped. The major vessels are separat-

Table 1

Postoperative staging*

Stage	No. of patients
$T_1N_0M_0$	1
$T_2N_0M_0$	4
$T_2N_1M_0$	1
$T_3N_0M_0$	4
$T_3N_1M_0$	9
$T_3N_2M_0$	1
$T_3N_3M_1$	2
Total	22

* Lymph node carcinoma propagating to the opposite side is rated as a distant metastasis.

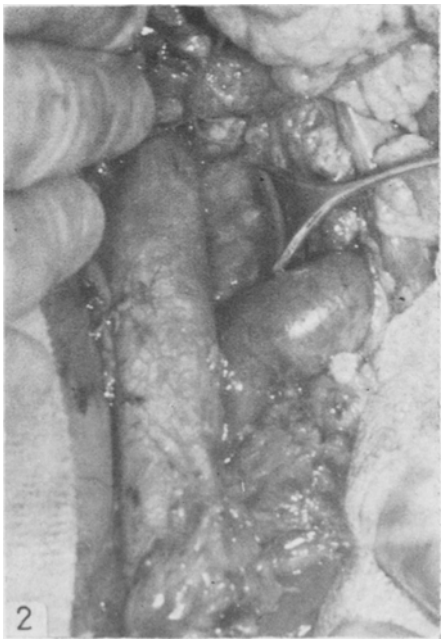

Fig. 2. Isolated renal artery and vein visible across the retroperitoneal plate aperture

ed from the lymphatic tissue to identify by palpation the left renal artery, cranially underneath the vein (Fig. 2). Impossibility to recognize the left renal vein in proper height over the aorta is a sign to suggest retroaortal location, most often extending caudad of the artery, with a few cm distance between the two vessels (Fig. 3). First the artery, next the vein are clamped to prevent tumour cell dispersion. Clamping first the vein would render the operation unnecessarily difficult, as the vessels under stasis are likely to bleed upon touch. On dissection of the renal vessels, the linear flexure of the colon is pulled medially and the peritoneum at the border between parietal and visceral portion is reopened along a white line above the kidney by a cut as far as the splenocolic ligament.

To gain access to a right-side tumour, the renal artery is clamped either between the two major vessels or on the right side of the cava, with care not to injure the left renal vein in the process of preparation.

The intracolic peritoneal apertures, no matter on which side the tumour is located, are left open on management of the vessels, and after extracolic separation of the kidney the lymphadenectomy is carried out. With retroperitoneal communication existing below the two apertures, it suffices to insert into the kidney bed a drain with extraperitoneal outlet on the lateral portion of the anterior abdominal wall. Thus the supine patient, under pressure of several cm H_2O, will discharge secretion in the upward direction but this slight inconvenience dwindles in face of the advantage that he is safe from resting on the drain. The retroperitoneal aper-

Fig. 3. Retroaortal left renal vein and artery 4 cm apart

tures are closed; an intraperitoneal drain is exceptionally left in position only. A gastric probe is usually applied for 24 to 48 hours and removed thereafter, subject to the commencement of peristalsis.

All of our operated patients are alive; however, the follow-up periods were too short for the survivals to be assessed, neither was this the purpose of the present report. Direct abdominal complication, intestinal injury, postoperative ileus have never been noticed. All median laparotomy wounds healed by first intention, hernia never occurred.

Advantage of total median laparotomy

The literature, while unanimous regarding the call for radical operation, recommends several ways of approach, depending on tumour propagation and size, and admits the primacy of the transperitoneal route to take care of the renal vessels. From among contributions by Hungarian authors, those by Pintér et al. should be emphasized [8, 9]. For dealing with a case in the $T_{2-3}N_{0-1}M_0$ stage, they advocate the extrapleural thoraco-abdominal approach which makes it possible to remove even a major tumour infiltrating the retroperitoneum. No doubt, the incision must be long and the exposure wide enough to keep the radicality degree undiminished, with due regard of course for the patient's general condition, body build, corpulence, spinal and costal hypomotility and earlier operation scars.

From all this it follows that the choice of the access route must never be arbitrary but should be taken with consideration of all relevant facts. In this Department we performed radical nephrectomy by subcostal incision through thoraco-abdominal extrapleural exposure when the tumour was lodged in the upper pole and when it measured more than 5 cm in diameter. Otherwise our choice has always been total median laparotomy, either transversal or longitudinal. The general statement that a transversal incision inflicts smaller damage than a longitudinal upon the parietal statics holds only if the exposure was performed across the anterior abdominal wall. However, if the cut extends as far as the much weaker lateral wall, the consequence may be a postoperative peri-incisural vaulting, such as urologists have frequently encountered. Median laparotomy provides optimal conditions for both essential phases of the operation: primary vascular management and lymphadenectomy. It also permits a tumour thrombus to be removed if necessary, as well as certain interventions to be performed on the contralateral kidney. The preoperative staging $T_{1-2}N_0M_0$ induced us to abstain from the invasive angiographic test which would have left the therapy plan anyway uninfluenced, although we thus remained without the excellent aid of mapping, and without the information it would give about vascular anomalies [5]. In the face of this loss it is even more important to prepare the vessels accurately through comfortable median approach. Removal of the ipsilateral connective tissue is an important point though less so than in the case of a testicular tumour. The absence of macroscopic lymph node metastases makes it unnecessary to clamp the lumbar vessels and to mobilize the major vessels to full extent.

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