Lymphadenectomy in Urology

V. Szokoly, J. Pintér, L. Szomor

Department of Urology and Nephrology, County Hospital and Outpatient Clinic, Miskolc, Hungary

(Received July 25, 1978)

Surgical radicality in tumours of the urinary tract with lymphonodular deposits requires extirpation of the adjacent and regional lymphadenoid tissues, in particular of the lymph nodes. The theoretical and practical aspects of lymphadenectomy in testicular and renal tumours are discussed, and the technical problems are outlined. The importance of early diagnosis and the benefits of surgery of adequate radicality involving lymphadenectomy are emphasized.

Malignant disease is fraught with deposit formation. Ectodermal tumours are prone to lymphogenous, mesodermal tumours to haematogenous deposits. The prognostic implications of deposits are all too well known. While haematogenous distant metastases greatly limit the activity of the surgeon, the outlook in case of regional lymphogenous metastases is less gloomy. Radical surgery followed by radiotherapy and/or cytostatic medication may be curative or may prolong survival. Radical surgery is synonymous with the resection of the tumour-bearing organ and of the regional lymphadenoid tissue. This trend is by no means new if lymphadenectomy in tumours of the breast and stomach is considered [3, 16].

Resection of the adjoining and regional lymphatic tissue has become current practice in the USA since the 1950s. This policy has been later adopted in Europe too. Lymphadenectomy in urological cancer was one of the major topics of the Second Congress of the Association of European Urologists in Prague [1].

A study-tour to the USA, Sweden and the Federal Republic of Germany has enabled us to gain direct information on the advantages of regional lymphadenectomy, which we have been employing since as a current surgical procedure.

Though it is not intended to describe here the lymphatic system of the body, the urological aspects of the retroperitoneal lymphatic circulation require a brief summary.

The retroperitoneal lymphatic system superior to the aortic bifurcation takes its origin from three main trunks, i.e. the right and left lumbar trunks (from the lower extremities, genitals, urinary organs, extraperitoneal portion of the large intestine) and the intermediate lumbar trunk (from the abdominal organs).
In front of (and posterior to) the inferior vena cava there is a network of communications between the trunks, particularly from the right to the left side. This accounts for the prevalence of deposits at the left side. The three main trunks form the thoracic duct which enters the thorax through the diaphragm at the right side of the aorta and, turning forward behind the oesophagus, empties into the left angulus venosus. The lymph nodes of the retroperitoneal region are situated laterally and anteriorly to the inferior vena cava and to the aorta, respectively, and between the large vessels [11, 14, 20, 21].

Since all testicular tumours are suspect of deposits, resection of the tumour-bearing organ offers no adequate therapy. Tumours with all the characteristics of seminoma call for telecobalt irradiations, in those of non-seminoma type pedal lymphography is followed by retroperitoneal lymphadenectomy. If the lymphogram is suspect of thoracic lymph node deposits, left supraclavicular lymph node biopsy is advisable. In case of thoraco-cervical or pulmonary deposits lymphadenectomy is of no use, although ultraradical surgery, i.e. excision of left supraclavicular mediastinal and retroperitoneal lymph nodes and of a pulmonary deposit through midline sternotomy and laparotomy, has been performed with success [9].

The route of approach may be abdominal, thoraco-abdominal or thoracolumbar. Though thoracotomy makes the suprahilar region accessible, only unilateral dissection can be achieved by a one-stage operation, therefore, bilateral dissection by the abdominal approach is generally given preference, this technique being compatible with a one-stage operation [7, 8, 9, 10, 14, 15, 20, 21].

Our practice in testicular tumours is to perform a midline incision from the xyphoid process to the symphysis. The transverse colon and the small intestine are lifted from the abdomen and packed into pads soaked in tepid saline, care being taken to keep the intestines at the necessary temperature and humidity during the long intervention. The posterior peritoneum is split in the midline and the retroperitoneal area between the renal artery and the aortic bifurcation is exposed. The lymphadenoid tissues in the area of the renal vessels are excised first. If (possibly on the evidence of frozen sections) deposits are found in the region superior to the renal vessels too, the operation offers little chance. Resection of the testicular vein at the side of the tumour is also required. Vahlensieck advocates nephrectomy at the affected side—"extended lymphadenectomy"—in case of large hilar tumour masses [20, 21].

Proceeding invariably in the downward direction, all apparent loose connective, lymphadenoid and adipose tissues have to be removed (Figs 1 and 2). The inferior mesenteric artery can be sacrificed, care being taken to tie it just at its origin, so as to leave its arcades intact. The intervention includes mobilization of the inferior vena cava and the abdominal aorta, in order to gain access to the lymph nodes situated between and behind the two large vessels. This involves the hazard of major bleedings from the lumbar veins and may require ligation of several lumbar arteries, which may cause spinal lesions. It is essential to leave the ureters and their blood supply intact. For haemostasis ligations, undersewings,