The Treatment Issues of Primitive Retroperitoneal Tumors

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ABSTRACT Primitive retroperitoneal tumors are entities that occupy a relatively small area of surgical pathology, in the area of diagnostic and therapeutic interest of many surgical specialties, being the common practice of the general surgeon as well as the urologist and gynecologist. In order to achieve the goal of the paper, pointing out the importance of primitive retroperitoneal tumors; most of them arriving late at the surgeon's examination - because of the possibility of them evolving to large sizes in their space, without constantly causing major clinical suffering - and to highlight the importance of treatment problems we used a retrospective study on a period of 10 years, a group of 56 cases of primitive retroperitoneal tumors hospitalized and operated in the Surgical Clinic I of the Emergency County Clinical Hospital of Craiova, for the most effective therapeutic management of patients with primitive retroperitoneal tumors (TRP).

KEY WORDS primitive retroperitoneal tumors, treatment, laparotomy, complications

Introduction

Whether their presence is detected de novo or it represents the metastases of a tumor primarily developed in another organ, their treatment raises special problems for the clinician.

Despite the advances in technology, immunology and genetics, surgery remains the terminus stage able to diagnose, treat and significantly extend patients' lives.

If for the rare retroperitoneal tumors which are certainly benign and are confirmed as such after a long surveillance of these cases there is no controversy regarding the treatment, surgical excision being widely accepted as the only logical and effective method of treatment, for the malignant ones there are many points of view for therapeutic protocol regarding both the series of methods and their effectiveness. Of course, it should be known by all that the therapeutic association principle must be applied accordingly in case of malignant primitive retroperitoneal tumors to achieve maximum benefit for the patient.

Purpose

Highlighting the problems of patients with primitive retroperitoneal tumors in view of a more efficient management.

Material and Method:

The study was based on analysis of a group that includes 56 cases of primitive retroperitoneal tumors diagnosed on clinical examination, in conjunction with biological and imaging investigations and histo-pathologically confirmed, admitted and treated in Clinic I – Surgery of The Emergency County Hospital of Craiova during 1999-2009.

We did not insist on the anatomy of the region or on already known clinical and histological aspects, but we will briefly mention them below.

Primitive retroperitoneal tumors are a relatively rare oncologic pathology, under 0.2% of all tumors. They predominantly occur in the age decade 4-7, but can be found at extreme ages (infants or elderly), without a greater percentage to any of the sexes.

Due to the wealth of loose connective tissue and of anatomical elements incorporated in the retroperitoneum, the histological types of encountered retroperitoneal tumors are numerous. Thus, out of a total of 56 cases, 14 cases (25.00%) were benign primitive retroperitoneal tumors, represented by one hemangioma, one angiomylolipoma, two leiomyomas, five myxomas and five cystic tumors, 31 cases (55.36%) were malignant primitive retroperitoneal tumors represented by eight lymphomas, three fibrosarcomas, three liposarcomas, two myxosarcomas, one leiomyosarcoma, one hemangiopericytoma, six schwannomas, three paragangliomas, two adenocarcinomas, one carcinoma, one hepatoma and 11 (19.64%) primitive retroperitoneal tumors with undefined structure.

Surgery time was the main therapeutic stage, involving complex interventions in 34 cases (60.71%), palliative surgery in 13 cases (23.21%) and in 9 cases (16.07%) it was narrowed down to laparotomy exploration, being considered risky,
mainly because intimate vascular relationships (aorta, inferior vena cava, the hepatic pedicle, celiac trunk, superior mesenteric pedicle).

The incisions used were: median subxifo-suprapubic incision 45 cases (80.36%), bysubcostal incision 6 cases (10.71%), paramedian incision, 4 cases (7.11%), transversal sub-umbilical incision 1 case (1.79%).

The topography of the tumor was: centroabdominal - 18 cases (32.14%); right hemiabdomen - 26 cases (46.43%); left hemiabdomen - 11 cases (19.64%), hypogastrium 1 case (1.79%)

Tumor sizes ranged from 13cm to 34 cm.

Tumor removal was possible in 34 cases (60.71%) with the need for visceral sacrifice in block, with nephrectomy (2 cases), splenectomy (3 cases), pancreatectomy (3 cases), right hemicolecotomy (4 cases), left hemicolecotomy (2 cases), cholecystectomy (4 cases) and partial duodenal resection (one case). In a number of 13 cases (23.21%) in which the tumor could not be removed, digestion derivatives were used such as gastroenteroanastomoses (8 cases) or ileotransversoanastomoses (5 cases).

Vascular lesions were represented by: lumbar vessels lesions (uprooting them) - two cases resolved by ligation; left common iliac vein lesion - one case (suture), a superior mesenteric vein injury - one case (suture) and in one case, the ligation of the inferior vena cava was required, injured during tumor dissection. Achieving intraoperative hemostasis required, in two cases, hemostatic message of the remaining space after the removal (partial or total) of the tumor.

A somewhat unexpected finding was the absence of visual or palpable detectable metastases. Although the preoperative explorations did not report remote dissemination, we were expecting to find them during intraoperative explorations but it never happened. This confirms some opinions in the literature that the dissemination of these tumors is mainly through local invasion.

The average duration of the surgery was 2 hours and 24 minutes, varying between an hour and a half and 3 hours and 20 minutes.

Intraoperative mortality was zero.

Surgical therapy was completed by irradiation and chemotherapy treatment. Chemotherapy was used in 27 cases (48.21%), the remaining patients with this indication for treatment having refused it.

Chemotherapy was performed in the following cases: when tumors were considered inoperable, in combination with irradiation to decrease tumor size and metastatic potential, with patients with partial tumor excision, patients with complete excision to reduce the percentage of relapse.

Chemotherapy was applied through several methods: oral, intravenous, intra-arterial, and intramuscular or intra-tumoral. The most used method was intravenously because it is well tolerated, patients can be given the maximum dose in a longer period and you obtain a maximum concentration in the tumor.

In the treatment with chemotherapy, the following agents were used: Alkylating agents - cyclophosphamide endoxan in a single dose of 100-200 mg / day and Thio-TEPA in a single dose of 0.8 mg / kg corp or 100-150 mg, Antimetabolite - methotrexat, 5-fluorouracil, Antibiotics - actinomycine D daunorubimycine and adriamycina and Vinca rosea alkaloids: vincristine.

I turned to radiotherapy treatment only in 25 cases (44.64%), most of them, as with chemotherapy, refusing it. I applied it as an adjuvant treatment of surgery, in combination with chemotherapy. The purpose of radiotherapy in malignant tumors as in cancers in general, was to selectively destroy cancer cells.

Results

Immediate postoperative evolution was favorable in 53 cases (94.64%).

Immediate postoperative complications occurred in 19.64% of patients, as follows: death - three cases (one case postoperative acute pancreatitis, one case pulmonary embolism, one case acute myocardial infarction), postoperative abscesses in four cases, urinary tract infection in three cases, pneumonia in one case.

Remote postoperative complications are still incomplete and difficult to estimate because most patients are lost from the record: one case of relapse of myxoma, operated seven years ago (was removed); one case of
malignant schwannoma surgery three years ago (inoperable);

Regarding chemotherapy, we noted positive developments in seven cases of lymphoma, negative in nine cases of sarcomas and three cases of carcinoma and in the remaining cases the evolution was not influenced.

The radiation therapy’s efficiency could be evaluated considering the degree of sensitivity to irradiation of tumors. Thus, it was found that: tumors with high sensitivity were represented by: seven cases of malignant lymphoma, which showed a rapid regression at doses of 1500 rads; tumors with low sensitivity: 9 sarcomat ic tumor cases, three cases of sarcomas and six cases of malignant schwannomas, which only respond to radiation doses of 6000 rads.

**Discussions**

Primitive retroperitoneal tumors are rare tumors and malignant in most cases (5.36% of all cases), followed by benign tumors 25.00% and tumors with undefined HP structure 19.64%.

The myxomatous and cystic nature is predominant when speaking about benign tumors, as malignant tumor materialize with a high incidence of sarcomas, followed by malignant lymphoma.

The operability of retroperitoneal tumors varies widely, as follows: in case of benign retroperitoneal tumors, surgical treatment is sufficient and effective, but not 100%, except for tumors not entirely examined histopathologically, with malignant histological areas, cystic tumors whose walls were not entirely removed or multifocal tumors, conditions under which a relapse is possible, while malignant primitive retroperitoneal tumors have a low degree of resecability, mainly due to local invasion.

The most frequently used approach path was the wide transperitoneal which allows the tumor to be attacked given that the perspective of the lesion is more complete. The approach path can compromise the surgical act, as a tumor that may seem unresectable, can become resectable in case of a sufficiently large incisions and intraoperative incidents can be prevented and minimized.

Tumor sizes are very important in view of surgical treatment, but not decisive, since a sufficient and preferred approach path allows appropriate access in order to extirpate . We must keep in mind that primitive retroperitoneal tumors start to grow from a space with inaccurate boundaries without connective visceral capsular constraint, with huge expansion opportunities, lending blood vessels from multiple visceral and parietal sources, with a lymphatic drainage in different directions, in a broad network with multiple connections, which creates a lymphatic lake, creating great difficulties for control and for surgical excision.

The spaces left after removal are high and allow massive accumulations of blood and lymph.

Adjuvant cancer treatment: chemotherapy and radiotherapy may be useful in some histological types (retroperitoneal malignant lymphoma), otherwise the results are discouraging.

Immediate postoperative evolution was favorable in most cases; remote results cannot yet be appreciated, because a a steady tracking could not have been achieved.

**Conclusion**

Treatment of retroperitoneal tumors still represents a difficult chapter in surgical pathology, in terms of rarity, late diagnosis, local-regional invasive nature and high rate of relapse.

The current concept in the treatment of primitive retroperitoneal tumors is the total tumor excision surgery as a single treatment or in combination with che mo-and Rx-therapy, sometimes immunotherapy.

Exploratory laparotomy is mandatory for all primitive retroperitoneal tumors, including the presence of metastases and relapses.

**References**


2. Derek Raghavan-Germ cell tumors,Publisher - PMPH-USA 2003, p. 108


7. Sam D. Graham, Thomas E. Keane-Glenn's Urologic Surgery - Publisher Lippincott Williams & Wilkins 2009 USA p.442-451

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