Prognostic value of microscopic evaluation of organ infiltration and visceral resection margins (VRM) in patients with retroperitoneal sarcomas (RPS).

Renée SL¹, Tagliabue M², Pasquali S², Collini P¹, Barisella M¹, Callegaro C², Colombo C², Gronchi A², Fiore M²;
¹Sarcoma and Pediatric Pathology Unit; ²Sarcoma Surgery Unit – Fondazione IRCCS Istituto Nazionale dei Tumori, Milan, Italy

ABSTRACT

Background. Surgery with gross margin clearance (R0 and R1) is the standard treatment for RPS and visceral resection has been proposed even in the absence of macroscopic visceral infiltration. Formal definition and margin sampling criteria for pathological evaluation are lacking for RPS. Aims. This study investigated visceral resection margins (VRM) as well as visceral infiltration (VI) and their association with patient survival. Methods. Primary RPS (2009-2014) VRM were sampled for each resected organ and classified (+/−). Relationship between neoplasm and resected organ were sampled and organ VI classified (+/−). Results. 207 Pts, VRM +ve 25(12%), VRM −ve 182 (88%), VI +ve 140 (62%), VI −ve 37 (18%). OS (VRM+ve & VI+ve) VS (VRM−ve & VI−ve) (HR = 3.56; 95%CI 1.15-11.00, P = 0.028); (VRM+ve) VS (VRM−ve & VI−ve)(HR = 7.76; 95%CI 2.18-27.65, P = 0.002) after adjustment from known prognostic features. Conclusions. After liberal multivisceral resection for primary RPS: 80% of patients have infiltrated organs at some extent. VRM are positive in up to 50%. Visceral resection is justified even in the absence of macroscopic infiltration. Systematic evaluation of microscopic involvement of adjacent viscera may stratify prognosis.

OBJECTIVES

Since neither uniform surgical approach nor pathology sampling procedure and reporting in RPS is determined and universally accepted, this study investigated visceral resection margins (VRM) as well as visceral infiltration (VI) and their association with patient survival in a centre performing percutaneous multivisceral resection for primary RPS.

METHODS

Primary RPS (2009-2014) were extracted from a prospectively maintained database. Sampling procedure followed the rule of one block for tumor cm; it also included 1) resection margins of the viscera, and 2) relationship between visceras and neoplasm. VRM were classified as follow: negative, positive with low-grade component, and positive with high-grade component. Also, VI was classified as follow: absence of infiltration, infiltration of perivisceral fat, early infiltration (i.e. renal/adsnal capsule, muscular fascia, contact with muscular tunica of hollow viscera), and infiltration of the visceras. Univariate survival analysis was performed with the Cox proportional hazard model and log-rank test as appropriate. Significant variables at univariate analysis were adjusted in a multivariable Cox regression model.

RESULTS

There were 207 patients, followed for a median of 42 months. Visceral resection margin (VRM) were negative in 182 (88%) patients and positive in 25 (12%); 17 (8%) had at least two positive VRM. Moreover, positive VRM were with low-grade component, and high-grade component in 15 (7%), and 10 (5%) patients, respectively. Visceral infiltration (VI) was absent, perivisceral, early, and visceral in 37 (18%), 22 (11%), 40 (23%), and 100 (48%) patients respectively.

CONCLUSIONS

• After liberal multivisceral resection for primary RPS: 80% of patients have infiltrated organs at some extent and VRM are positive in up to 10%.
• Age, size and histotype are associated with VI, whereas VRM is an independent prognostic factor.
• VRM impact on OS may reflect either presence of residual disease or particular aggressiveness.
• Adequate visceral resection is justified even in the absence of macroscopic infiltration.
• Systematic evaluation of microscopic involvement of adjacent vissera and their margin status may contribute to prognostic stratification.