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Sporadic extra abdominal wall desmoid-type fibromatosis: Surgical resection can be safely limited to a minority of patients

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Abstract ***Background:*** To analyse the natural history of extra-abdominal wall desmoid-type fibromatosis (DF) and compare outcome in patients who underwent initial surgery with those who did not.

Patients and methods: All consecutive patients affected by primary sporadic extra-abdominal wall DF observed between January 1992 and December 2012 were included. Patients were divided into surgical (SG) or non-surgical groups (NSG) according to initial treatment. Relapse free survival was calculated for SG, and crude cumulative incidence (CCI) of switching to surgery or other treatments for NSG.

Results: 216 patients were identified, 94 in SG (43%), 122 in NSG (57%). A shift towards a more systematic use of a conservative approach (78% of all comers) was observed in the latter years (2006–2012), although a small proportion of patients (28%) had been offered the conservative strategy even in the early period (1992–2005). Median follow-up (FU) was 49 mo. (interquartile (IQ), 20–89 mo.), 76 months for SG and 39 months for NSG. 5-year

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relapse-free survival (RFS) for SG was 80% (95% confidence interval (CI), 72–89%). For the NSG, 5-year CCI of switching to surgery was 5% (95% CI: 1.7%, 14%), and 51% to other treatments (95% CI: 41%, 65%). 27 (20%) NSG patients underwent spontaneous regression. ***Conclusion:*** A non-surgical approach to extra-abdominal wall DF allowed surgery to be avoided in the majority of patients. This approach can be safely proposed and surgery offered as an option in selected cases.

1. Introduction

Surgery was for many years the mainstay of therapy for desmoid-type fibromatosis (DF) [1]. In the past an observational approach was reserved for patients with unresectable/recurring disease [2,3]. More recently this strategy has been applied also to primary DF [4,5], with some concerns about tumour location [6–8]. Abdominal wall DFs are characterised by the most indolent course. We recently showed a 30% spontaneous regression rate in this subgroup [9]. Arguments have been made about using same approach to extra-abdominal wall DF [10]. On this basis we undertook the present analysis in a retrospective series of patients observed and treated at two major reference centers over the past 20-years.

2. Patients and methods

All consecutive patients with primary sporadic extra-abdominal wall DF treated at Fondazione IRCCS Istituto Nazionale dei Tumori, Milan, Italy and Institute Gustave Roussy, Paris, France between January 1992 and December 2012 were included in this study. Patients with familial adenomatous polyposis-related DF and recurrent disease at presentation were excluded. Patients were divided into two groups according to whether they had received surgery as the initial treatment (surgical group, SG) or had not (non-surgical group, NSG). The latter group underwent a variety of different approaches, including: wait and see (W&S), medical treatment (anti-COX2, hormonal agents, chemotherapy, imatinib), radiotherapy (RT). Tumour size was defined as the greatest dimension of the surgical specimen reported by the original pathologists or in the radiological imaging before any treatment.

Radiological follow up was performed in the SG group every 6 months with contrast-enhanced magnetic resonance imaging (MRI) or computed tomography (CT) scan (with ultrasound in the superficial location after the 5th year) or in the NSG group, in the first month after diagnosis and then every 3 months in the first year and 6 months thereafter.

The study was approved by the local Institutional review boards.

2.1. Statistical methods

The analyses were performed using SAS® and R software [11]. We considered a statistical test to be significant when the corresponding p value was $<5\%$.

Different outcomes were analysed using survival analysis techniques; the starting time for the computations was the date of surgery for SG patients and the date of diagnosis for the NSG patients. For both SG and NSG patients we estimated overall survival (OS); time was taken as the interval between the starting time and death from any cause, with censoring at the last follow-up for patients remaining alive. For SG patients we estimated: (i) relapse-free survival (RFS) considering a relapse or death from any cause to be events, whichever occurred first, with censoring at the last follow-up for patients remaining alive and without relapse; (ii) the crude cumulative incidence (CCI) of local relapse [12], considering death without relapse to be a competing event, with censoring at the last follow-up for patients remaining alive and without relapse. Given the retrospective nature of the present analysis and the difficulty of evaluating progression in this slow-growing disease, for the NSG patients we estimated: (i) the CCI of switching to surgery, considering death without switching and switching to treatments other than surgery to be competing events, with censoring at the last follow-up for patients remaining alive who did not switch treatment. (ii) the CCI of switching to other treatments, considering death without switching and switching to surgery as competing events, with censoring at the last follow-up for patients remaining alive who did not switch treatment. Slow growth that may qualify as progression in a classical progression free survival calculation but which did not lead to a change in strategy was not considered a failure of the conservative approach.

Comparisons between CCI curves were carried out by means of the Gray test [13].

3. Results

Patient and tumour characteristics are listed in Table 1. There were 135 females/81 males (ratio 1.7/1). Median age of patients at the time of the initial diagnosis was 41 years (interquartile, IQ range, 31–56). The median size of the primary tumour was 7 cm (IQ range, 5–11).