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Biological Reconstruction in high grade sarcomas – Patients under 12 years old

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OBJECTIVES

1. Present our long term follow up of Biological Bone Reconstructions after resections of high grade sarcomas close to the growth plate.
2. Autologous bone reconstruction and long term follow up (14 - 312 months - average 173 months)
3. Safe resections and reconstructions close to the growth plate.

METHODS

- From June 1984 to June 2010, we treated 262 patients with High Grade Sarcomas (178 osteosarcomas and 84 Ewing's Sarcoma) in Santa Casa Medical School of Sao Paulo (Brazil) and The Hospital Alemao Oswaldo Cruz of Sao Paulo (Brazil)
- We exclude all cases treated in Pelvic Girdle, Pectoral Girdle, Spine, hand, forearm, foot, cases treated exclusively by radiation therapy and cases that were reconstructed by endoprostheses or don't need reconstruction (fibular cases)
- Considering 53 cases (27 Osteosarcoma and 26 Ewing's Sarcoma) in lower and upper limb submitted to resection and exclusively treated by surgery and autologous bone reconstructions.

RESULTS

- We analyse all 53 cases with limb salvage surgery and follow up from 14 - 312 months - average 173 months).
- Epidemiology: 36 males and 17 females, age: 5 to 12 years old (average 11,2), 26 cases in Femur, 17 in tibia and 10 in humerus.
- All 53 cases were treated with diaphyseal or metaepiphyseal or transphyseal resections close to the growth plate and reconstructions with autologous bone from fibula or iliac crest . 36 Non vascularized reconstructions, 13 fibular vascularized reconstructions and 4 cases of transposition from fibula to tibia.
- Complications:
 - 16 with fractures or delay of consolidations: 9 need 1 new procedures to include more iliac crest, 5 need 2 new procedures to include more iliac crest and 2 need 3 new procedures to include more iliac cres.
 - 3 case of superficial infections: treated with antibiotic therapy.
 - 2 case recidive in diaphyseal segment and were submitted to revision with endoprostheses.
 - 1 case recidive in soft tissue mass, resected and adjuvant radiation therapy.
 - 4 cases death with pulmonary metastasis, no local recurrence.
 - 1 case had cerebral metastasis after 67 months post surgery, no local recurrence.
- All 48 remaining cases still alive and had consolidations and doesn't need any kind of support.

CONCLUSION

We considering diaphyseal or metaphyseal or transphyseal resections safe even when the lesion is close to the growth plate and bone autologous reconstructions may offer long-standing reconstructions even in High Grade Sarcomas in pediatric patients (follow up: 14 to 312 months, average 173 months).

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