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## What's New in Complex Limb Salvage and Reconstructive Procedures

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Surgery remains the most effective treatment for bone and soft tissue sarcomas. Even in the context of multimodal treatment strategy of high-grade lesions, surgical management is crucial and finalized to gain local control of the disease, which remains a fundamental requirement to undertake curative treatment of sarcomas. Surgical margins directly correlate with local control and risk of recurrence. Less than optimal surgical margins and increased risk of local relapse have been historically associated with management of sacropelvic and spine tumors. Today, an integrated multi-dimension surgical imaging system, usually CT based, is available to assist the surgeon with intraoperative "navigation". While intuitively helpful for orientation in a complex three-dimensional anatomy, this exciting opportunity requires clinical validation in terms of achievement of surgical margins, incidence of local recurrence and perioperative complications, and overall cost-effectiveness. Adequate length of follow-up and scientific rigor will be crucial in order to assess these variables and refine indications to intraoperative navigation. Technology is also providing opportunities for improved bone fixation and implant longevity in a variety of different methods. In fact, new foam metal-based implants, have been associated with remarkable bone ingrowth and excellent clinical results, including a post-radiation setting. Improved manufacturing of CT-based, precise-fitting custom implants incorporating porous structure to enhance fixation in critical areas, is also today possible. Interesting appears also the availability on the market of new carbon fiber devices for fracture and prophylactic fixation as an alternative to conventional metal, either stainless steel or titanium. While offering comparable, if not superior, biomechanical properties, carbon fiber-PEEK composite implants are completely radiolucent and associated with essentially no artifacts on CT and MRI imaging. Again, adequate clinical validation is required to fully understand the real impact of these new opportunities in surgery of musculoskeletal tumors.

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