LUMBO-PELVIC FIXATION USING OFF-THE-SHELF FULLY RADIOLUCENT HARDWARE

A 50yo woman was referred to our centre for a right lumbosacral lesion, originating from an osteolytic lesion of the right sacral wing and the iliac crest, with intense right innominate sciatica pain lasting at least 6 months. A core needle biopsy was performed with a diagnosis of G2 chondrosarcoma. There were no distant metastases at the chest-abdomen CT. The last CT/MR scans showed a mass invading the right sacral foramina, the right side of the sacral canal, the right L5/S1 foramen and a large extension into paravertebral muscle groups. A rapid worsening of the neurological deficits of bowel and bladder control imposed to go for surgery. A custom made reconstruction was advisable but not feasible in term of timing. The local extension of the lesion was at high risk for intralesional surgical margins; a stabilization with radiolucent hardware was chosen to allow a better postoperative radiotherapy. A right hemisacrectomy extended to the iliac bone was performed with the aid of an intraoperative aortic balloon to limit bleeding. During surgery, the neoplasm proved to invade all the sacral spinal canal; the neoplasm was entirely removed although with intralesional surgical margins at the sacral median osteotomy (the intraosseal neoplasm was macroscopically removed by piecemeal resection).

After the resection the lumbosacral defect was stabilized adapting radiolucent conventional spinal screws and rods (Carbofix, Israel) using side to side connectors. The final pathology report confirmed the diagnosis of chondrosarcoma G2. The patient recovered the bowel and bladder function, and she is walking with a slight steppage as expected by the sacral resection with a full weight-bearing at 2 months. She was referred to radiotherapy department for high dose postoperative radiation treatment.

At 6 months follow up no sign of local recurrence or failure/loosening of the instrumentation.

The surgical technique adopted to reconstruct the continuity of the sacroiliac joint is a valuable option to be taken into consideration when a custom-made reconstruction is not feasible due to fast progression of disease and short time for surgery. Spinal instrumentation have already been used to reconstruct the sacroiliac joint or the iliac region. This new carbon fiber-PEEK instrumentation is radiolucent with a great advantage in the planning for postoperative radiotherapy and in the radiologic follow up limiting the artifacts and the back-scattering phenomenon due to the metal hardware. This instrumentation is adaptable to pelvic reconstruction and reliable. A longer follow up is mandatory to evaluate the outcome. Custom-made rods could represent a solution for surgery scheduled at mid-term.