ILIZAROV APPLICATIONS TO BENIGN BONE TUMORS

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The different Benign bone tumors sometimes is very difficult to treat. Patients may present to the orthopaedic surgeon with pain, a mass or an abnormal radiographic finding detected during the evaluation of an unrelated problem. The pain initially may be actively related, but a patient with a malignancy of bone often compliance of progressive pain at rest and at night. Patients with Benign bone tumors also may have activity-related pain if the lesion is large enough to weaken the bone. Other benign lesion, most notably osteoid osteoma, may cause night pain initially. We treated 31 limbs of 35 patients with deformity and different LLD due to Benign bone tumors over a period of 24 years with Ilizarov technique. We conclude that Ilizarov technique in different bone tumors is an appropriate treatment for patients with different tumor locations. We also report the cost, safety and functional outcome of Ilizarov technique.

Introduction to problem
The usefulness of Ilizarov external fixator was investigated for the treatment of benign bone tumors.

Materials and methods
Between 1990 to 2015, 27 patients with 31 limbs underwent different Ilizarov surgery due to different bone tumors. There were 25 male and 10 female with a mean age of 11 years. The etiology were osteochondroma in 9 patients Olliers disease in 5 patients, fibrous dysplasia in 11 patients and GCT in 10 patients.

Table: Etiological factors.

<table>
<thead>
<tr>
<th>Etiological factors</th>
<th>No.</th>
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<tbody>
<tr>
<td>Osteochondroma</td>
<td>09</td>
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<tr>
<td>Olliers disease</td>
<td>05</td>
</tr>
<tr>
<td>Fibrous dysplasia</td>
<td>11</td>
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<tr>
<td>GCT</td>
<td>10</td>
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<tr>
<td>Total patients</td>
<td>35</td>
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</table>

Results
The outcomes of the results were satisfactory in case of all these benign bone tumors.

Discussion
Although some tumors show a sex predominence (e.g female predominence with GCT), this is rarely of diagnostic significance. Family history can be helpful, as in cases of multiple hereditary exostosis and neurofibromatosis. Age is the most important information obtained in the history, because most Benign and malignant musculoskeletal neoplasms occur with specific age ranges. Mass measurement, its location, shape, consistency, mobility, tenderness, local temperature and change with position should be noted.

Ilizarov technique is a minimally invasive with a highly skill technique. All operations that we did in our centre were performed by senior surgeons. To prevent deep infection and superficial pin tract problems in our cases we used rubber stopper with proper dressing. During distraction phase, the rate of lengthening was adjusted according to the radiographs made every two weeks so that limb discrepancy could be completely avoided. The post operative protocols used in our study are routine protocols for limb lengthening.

Conclusions
Preservation and bone regeneration by means of distraction osteogenesis constitutes a highly conservative limb saving surgery. Patients with good defects of less than 10cm, a great deal of preserve healthy tissue and good prognosis are good candidates for these methods.

Disclosure
No conflicts of interest were declared by the author.