

RF ABLATION OF OSTEIOD OSTEOMA - THE LESION SIZE IS A DETERMINING FACTOR FOR TREATMENT CYCLES

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In the Royal National Orthopaedic Hospital, Stanmore, London, patients get referred for the treatment of osteoid osteoma (OO) ablation of the bone. These patients are discussed in the weekly tumour multi-disciplinary team meeting and the suitability of the lesions is assessed. Patients who are deemed fit for this treatment, get booked to have this procedure done under general anaesthesia.

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Ключевые слова: ablation, osteoid osteoma.

РАДИОЧАСТОТНАЯ АБЛЯЦИЯ ОСТЕОИДНОЙ ОСТЕОМЫ – РАЗМЕР ПОРАЖЕНИЯ ЯВЛЯЕТСЯ ВЕДУЩИМ ФАКТОРОМ ДЛЯ ОПРЕДЕЛЕНИЯ ЦИКЛОВ ЛЕЧЕНИЯ

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В королевский национальный ортопедический госпиталь Стэнмур, Лондон, были направлены пациенты для радиочастотной абляции остеοидной остеомы кости. Решение о соответствии поражений обсуждалось на еженедельном онкологическом мультидисциплинарном собрании. Пациентам, которым подходило данное лечение, процедура производилась под общей анестезией.

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Materials & Methods:

The audit encompassed data of patients who had been booked in the Royal National Orthopaedic Hospital for radiofrequency (RF) ablations of osteoid osteoma, over a 3 year period.

It was assessed if the number of patients who had required more than one treatment had any factors which led to this requirement. The number of patients who only required one treatment were also assessed.

For this purpose the radiology information system for the number of patients who required more than one treatment was reviewed. Patients' notes were consulted to see the follow-up findings to check if one treatment had been satisfactory.

Results:

The total number of patients treated during this time period was 66. The patients were treated with RF ablation.

The number of patients who required only one treatment for a successful cure of the lesion was 60. Six patients required more than one

treatment. All of these patients had their lesions in the appendicular skeleton.

On assessment of their clinical notes it was found that all of these 6 patients had an improvement in their symptoms following the first treatment. Within 3-4 months, however, their symptoms returned and they required reassessment. Reassessment was executed by performing an MRI scan followed by a CT scan. These examinations showed that the original treated lesion had not completely responded to the radiofrequency ablation and there was a residual lesion present.

4 of the 6 patients responded to the second treatment of RF ablation which was performed within one year of original treatment. The remaining 2 required a further RF ablation to completely cure the abnormality.

Of the 4 patients requiring a two-cycle treatment 3 had a cranio-caudal size of <1cm and both of the 2 patients requiring three-cycles had a cranio-caudal size of >1cm.

A repeat CT scan was performed. This shows

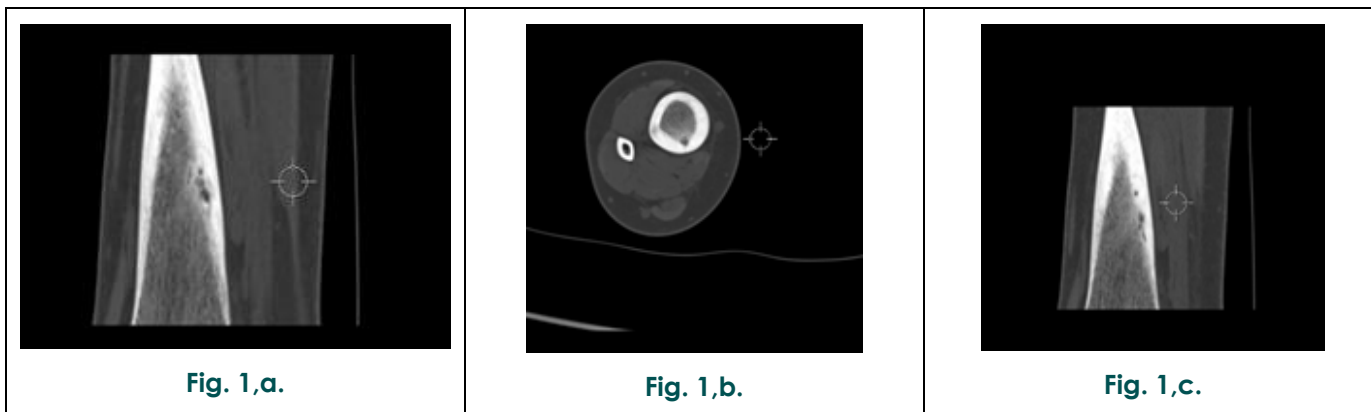


Fig. 1. CT scan of the tibia, bone window. Pre-treatment CT scan of a young boy who had an OO in his Tibia.

Note that the nidus of the tumour had a longitudinal morphology showing it to be somewhat wiggly in contour. It was therefore presumed that the tumour was present only in the upper half and the lower half represented a nutrient artery given the shape. A – Sagittal, b – Axial, c – Sagittal.

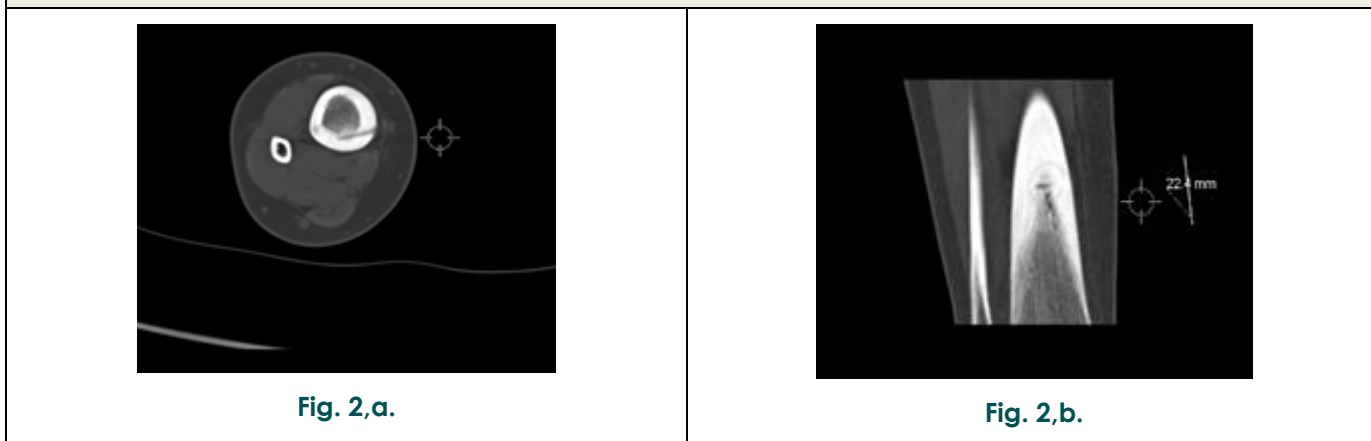


Fig. 2. CT scan of the tibia, bone window.

Following the treatment at one location for 6 minutes at 90 degrees C, his symptoms improved but did not completely go away. A – Axial, b – Sagittal.

the needle track which is surrounded by a 'halo' which has a diameter of 1.2 cm representing the effective treatment zone around the needle. Note that there was some tumour which was present below and outside this treatment halo. A second procedure then had to be done which resulted in a complete cure.

All cases of OO need to be carefully assessed for planning treatment and number of treatments required should be assessed.

Conclusion:

We conclude that 94% of lesions that are less than 1 cm in size would respond to one cycle of RF ablation.

Lesions that are bigger than 1 cm should have a careful planning of RF treatment approach and number of treatments to ensure that the entire tumour volume is covered for an effective ablation.

Table №1.				
	Number of Patients	Cranio-caudal Size		Notes
		<10mm	>10mm	
Total Number	66			
Single Treatment Cycle Response	60	46	14	
Two-cycle Treatment Response	4	3	1	
Three-cycle Treatment Response	2	0	2	All lesions present in appendicular skeleton

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