

# A minimally invasive method for the diagnosis of lesions affecting the jaws

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## OBJECTIVES

All surgical interventions in patients with bleeding disorders should be as minimally invasive as possible in order to minimize the risk of hemorrhage. Bone lesions can be studied by open biopsy or core needle biopsy (CNB). The latter poses the advantage of being a less traumatic and less invasive methodology, with high effectiveness rates according to the medical literature. Core needle biopsy is rarely used in the dental practice and little has been reported on its effectiveness in obtaining jaw tissue samples for biopsy. The aim of this study was to evaluate the effectiveness and convenience of using CNB as a methodology to obtain samples of lesions of the jaws with a mixed radiolucent-radiopaque appearance.

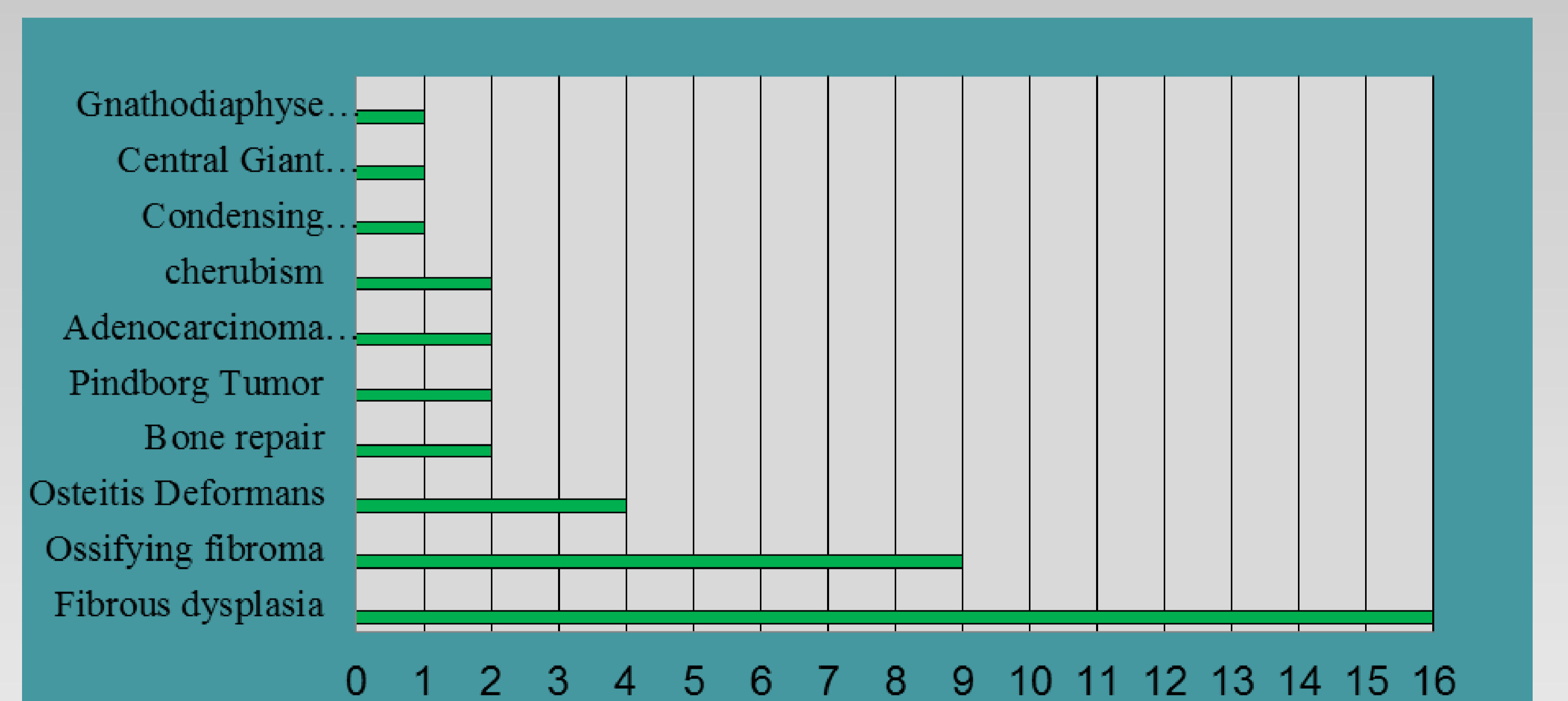
## METHODS

Biopsy material for diagnosis of intramaxillary lesions with a mixed radiopaque-radiolucent appearance was obtained using 11 gauge/10cm long bone marrow biopsy needles. A total of 40 lesions corresponding to 40 patients ranging in age from 6 to 80 years, were biopsied. Under local anesthesia, the needle was inserted through the mucosa, without the need for an incision. The correct placement of the needle inside the lesion was monitored and confirmed when necessary, using intra-procedure radiographic or CT scan images. The needle was removed once it had penetrated the full depth of the lesion; no suture was required. The obtained material was fixed in 10% formalin and demineralized in 7,5 % nitric acid. Paraffin-embedded sections were stained with HE. The histopathological diagnoses were classified as follows: accurate diagnosis; doubtful diagnosis; no diagnosis due to non-representative biopsy. Histopathological diagnoses were confirmed by comparison with definitive diagnosis based on the surgical specimen or a 2-year patient follow-up in cases not requiring surgical treatment. The occurrence of post-procedure complications was evaluated in all cases.

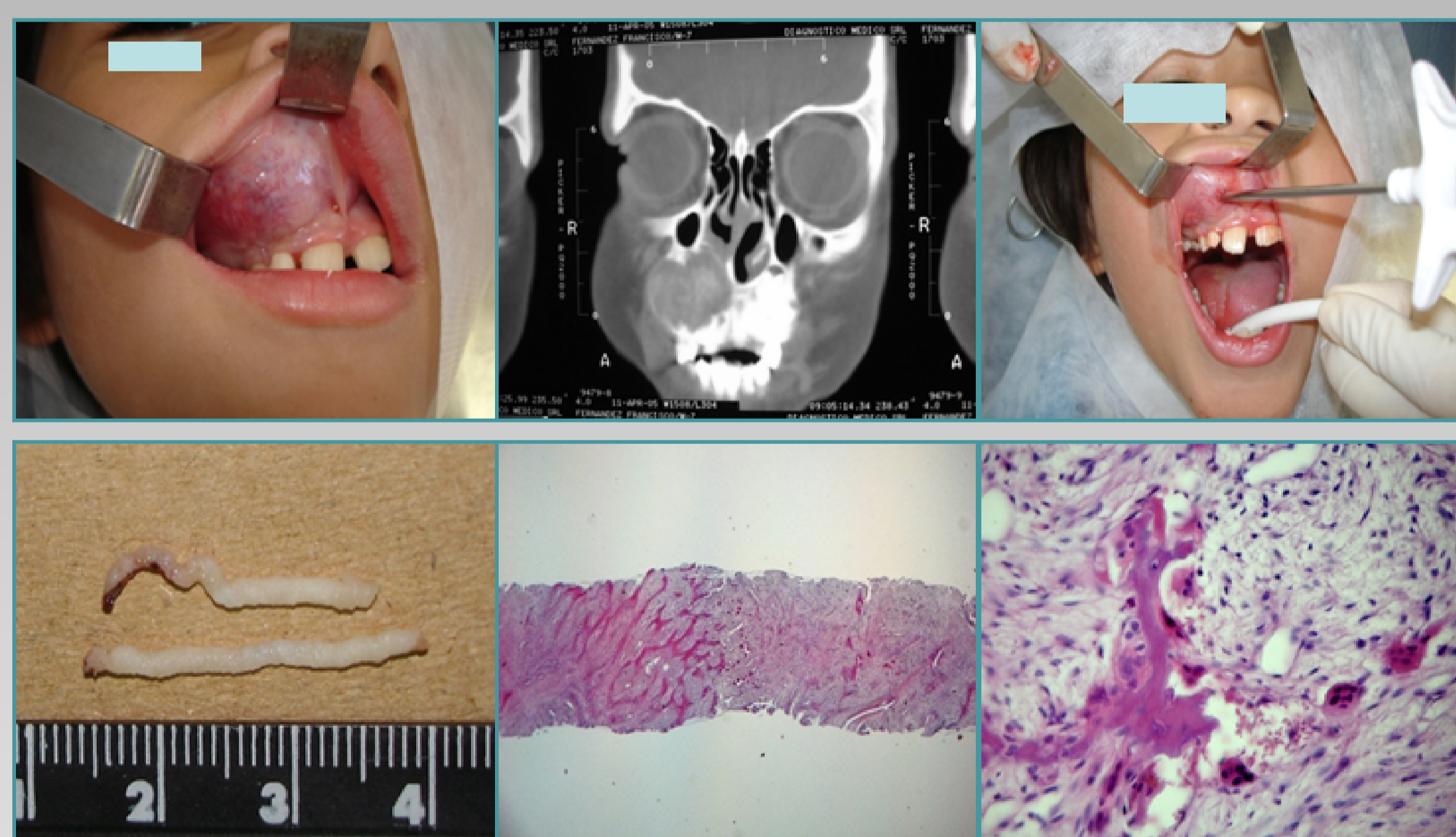
## RESULTS

-Diagnosis of lesions of the jaws with a mixed radiopaque-radiolucent appearance using CNB was accurate in 100% of cases (n=40).

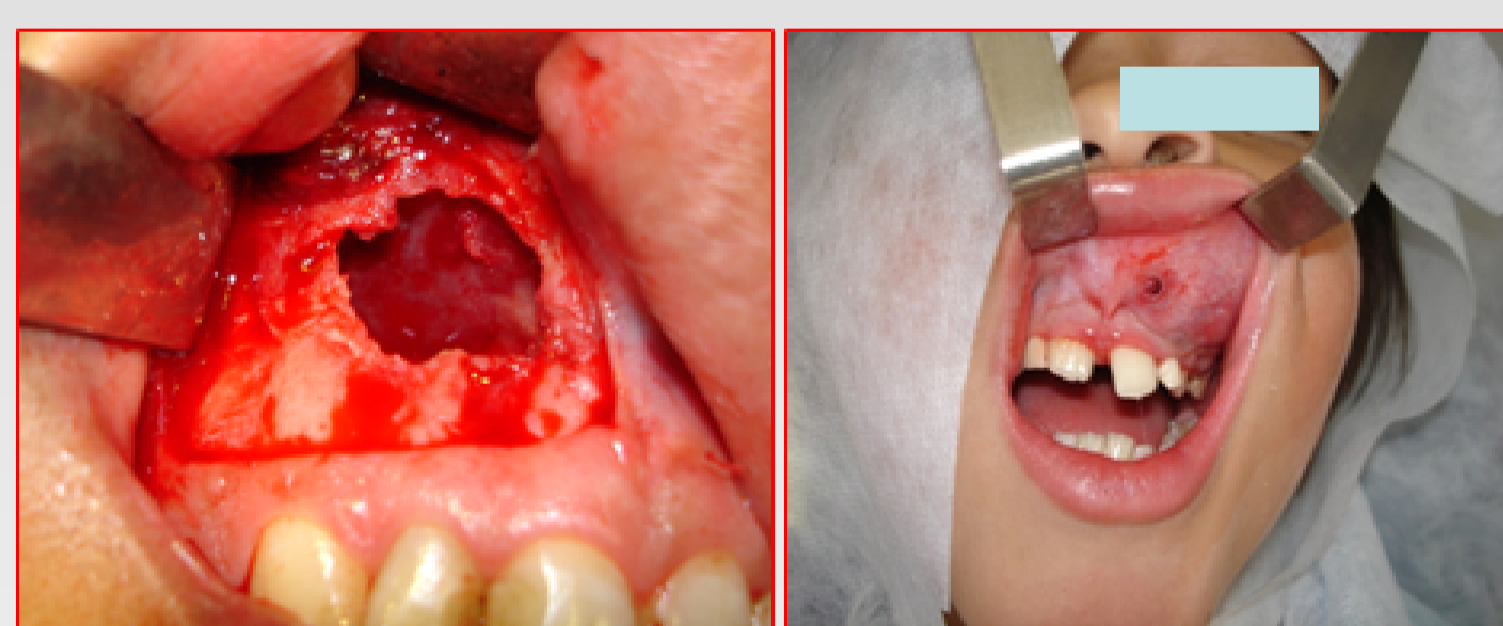
Types of pathologies diagnosed



-There were no immediate or delayed postoperative complications. -  
-There were no bleeding



Material obtained with core needle biopsy



Differences between open and closed biopsy

## CONCLUSIONS

CNB is a valuable method for the diagnosis of neoplasms and other lesions of the jaws, and offers a number of advantages together with minimum negative effects on patients. This methodology is less invasive than conventional surgical biopsy, and thus reduces the risk of intra- and post-procedure bleeding incidents in patients with coagulation disorders. It is an excellent diagnostic method for jaw bone lesions that have a mixed radiographic pattern, and should therefore be considered the method of choice for biopsy of such lesions.

## REFERENCES:

- 1- Schajowicz F, Derqui JC. Puncture biopsy in lesions of the locomotor system. Review of results in 4050 cases, including 941 vertebral punctures. *Cancer* 1968; 21: 531-548.
- 2- Van der Bijl AE, Taminiou AHM, Hermans J, Beerman H, Hogendoorn PCW. Accuracy of the Jamshidi Trocar Biopsy in the Diagnosis of Bone Tumors. *Clin Orthop and Related Res* 1997; 334: 233-243.
- 3- Mitsuyoshi G, Naito N, Kawai A, Kunisada T, Yoshida A, Yanai H, Dendo S, Yoshino T, Kanazawa S, Ozaki T. Accurate diagnosis of musculoskeletal lesions by core needle biopsy. *J Surg Oncol* 2006; 94: 21-27.
- 4- Pramesh CS, Deshpande MS, Pardiwala DN, Agarwal MG, Puri A. Core needle biopsy for bone tumours. *Eur J Surg Oncol* 2001; 27: 668-671.
- 5- Santini Araujo E, Olvi LG, Muscolo DL, Velan O, Gonzalez ML, Cabrini RL. Technical aspects of core needle biopsy and fine needle aspiration in the diagnosis of bone lesions. *Acta Cytologica* 2011;55:100-105

