



**Service Priorities and Programmes**  
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**Evaluating the Safety and Accuracy Profile of Image-guided Percutaneous Musculoskeletal Biopsies in Children: A Multidisciplinary Team Effort to Provide Optimised Patient Care**

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**Introduction**

Image-guided percutaneous biopsy is an established diagnostic modality for musculoskeletal (MSK) lesions. Percutaneous biopsies have distinct advantages as compared to open surgical biopsy, which have been well-documented in the adult population. These include: reduced wound pain, improved healing and a shorter hospitalisation stay.

**Objectives**

The authors reviewed the diagnostic yield, accuracy and safety profile of percutaneous paediatric MSK biopsies as a single tertiary-centre multidisciplinary experience.

**Methodology**

This was a retrospective study reviewing 51 image-guided percutaneous MSK biopsies performed over a seven year period, for children under 18 years of age. 22 computed tomography (CT)-guided biopsies were performed for 21 patients (age range: 3-17 years). 29 ultrasound (US)-guided biopsies were performed for 29 patients (age range: 0-17 years). Patient management was carried out in a multidisciplinary team approach, involving the interventional radiologist, orthopaedic surgeon, paediatrician, anaesthetist and pathologist in a seamless and coordinated effort to provide optimised patient care.

**Result**

[Results] Of the 22 CT-guided biopsies, 5 were performed under general anaesthesia (23%), and 17 were performed under local anaesthesia (77%). All US-guided biopsies were performed under local anaesthesia (100%). Both modalities had resulted in similar positive diagnostic yields (82% in CT-guided biopsy, versus 86% in US-guided biopsy), with a combined diagnostic yield of 84%. Biopsy accuracy was also similar

(73% in CT-guided biopsy as compared to 76% in US-guided biopsy), with a combined biopsy accuracy of 75%. No significant procedural-related complications were noted (0%). [Conclusions] Image-guided percutaneous MSK biopsies in children demonstrate high diagnostic yield and biopsy accuracy with an excellent safety profile. Systematic planning and a dedicated multidisciplinary team approach is of utmost importance in the clinical and histopathological success of this procedure.