Guideline Resource Unit
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Biopsy of Possible Sarcomas

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Alberta Health Services
CancerControl Alberta

Clinical Practice Guideline SAR-006 – Version 1
www.ahs.ca/guru

Introduction

Sarcomas are often large, deep-seated masses that may occur in locations that are poorly accessible to biopsy. This document outlines recommendations by the AHS Provincial Sarcoma Tumor Team comprised of individuals from the departments of surgery, radiation oncology, pathology, radiology and medical oncology. It is our goal to ensure that potential sarcomas are biopsied and submitted in the proper manner (without compromise in management) in order to provide adequate material for diagnosis and/or molecular testing. This will result in optimized treatment and decrease incidence of re-biopsy due to insufficient tissue.

Guideline Questions

1. What is the optimal procedure for biopsy of possible sarcomas?

Search Strategy

This guideline was created using an informal literature search.

Target Population

The following recommendations apply to adult patients who require biopsy for possible sarcomas.

Recommendations

We strongly encourage physicians seeing patients suspected of having sarcomas or having patients recently diagnosed with sarcomas to contact a member of the Provincial Sarcoma Tumor Team in order to enable proper evaluation and work-up of patients. This will ensure that they are given the best surgical options and treatment available.

Contact information:

CCI – New Patient Referral Office 780-432-8732

TBCC – Sarcoma Nurse Coordinator 403-521-3176

SPECIMENS:

Biopsy specimens may be of the following types:

1. **Core needle biopsies** – usually under diagnostic imaging guidance and often performed by radiologists. Creates minimal tissue damage and allows for flexibility in future surgical planning. This method of biopsy can occasionally leave some sarcomas unclassified and may underestimate grade, but is nevertheless the ***preferred biopsy method***.

2. **Excisional biopsies** – recommended only for small superficial lesions (above fascia). Incisions ***should not*** be oriented in the transverse plane, as this results in more extensive surgery if margins are found to be inadequate.

3. **Incisional biopsies** – usually only performed after discussion with multidisciplinary sarcoma team and often only by surgical oncologist. Allows for triage of material for molecular testing and improves sampling.

   If a gastrointestinal stromal tumor (GIST) is suspected clinically, please refer to Provincial GIST guidelines: (http://www.albertahealthservices.ca/assets/info/hp/cancer/if-hp-cancer-guide-sar002-gist.pdf)

SUBMISSION OF SPECIMENS FOR PATHOLOGIC EXAMINATION:

1. **Core needle biopsies:** Ideally, four-five (4-5) cores of tumor should be submitted, with the cores submitted as follows:
   - Option 1: 4 - 5 cores submitted in a formalin-filled container.
   - Option 2: 1 of the 5 cores may be submitted fresh, on saline-soaked gauze, and immediately transported to the laboratory (for freezing/research purposes, if proper consent forms completed), remaining cores divided in 2 formalin-filled containers as above. The frozen tissue can potentially be used for diagnostic purposes if needed i.e. if the cores submitted in formalin are non-diagnostic.

   If uncertain as to which biopsy approach should be used, please contact surgical oncologist.

   The size of needle used should be **the largest gauge possible** that can safely be used in a given patient/clinical situation. Ideally, ***14 gauge*** is preferred [See Appendix A].

   The needle used should enter the same skin puncture site and is then passed in different directions though the mass, ensuring diverse sampling of different regions of tumor. For retroperitoneal masses, a retroperitoneal approach is preferred to avoid tumor seeding. The anatomic approach for the biopsy should be chosen in anticipation of future surgery.

2. **Incisional/excisional biopsies**: submission of part of the tissue fresh/in saline (optional). This allows tissue to either be frozen for research purposes, provided there are proper consent forms completed.

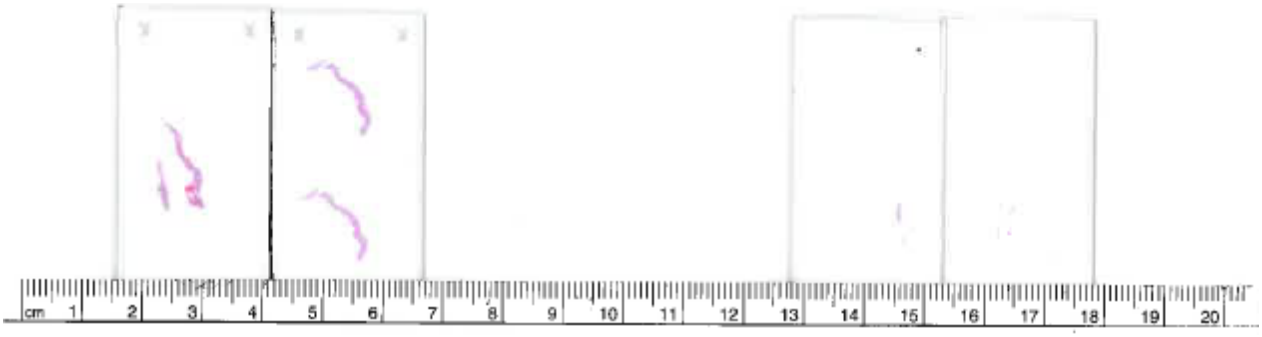
3. **Frozen section:** If sarcoma is mentioned in the differential diagnosis, submission of the specimen as per #2 is recommended.

4. **<u>Fine needle aspiration biopsy (FNAB):</u>** Although a potentially valuable biopsy method to document ***recurrent*** or ***metastatic*** soft tissue tumors, we recommend ***core needle biopsy*** (or incisional biopsy if a lesion is easily accessible) in the initial workup of an **<u>unknown</u>** soft tissue mass. If core biopsy is being performed, FNA is not required, and should not be performed.

Appendix A: Title of Appendix

Sarcoma Biopsy Protocol
14g Needle

Not Sarcoma Biopsy Protocol
20g Needle



References

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Yang, Y and Damron, T.A. Comparison of tru-cut biopsy and fine needle aspiration for diagnostic accuracy in musculoskeletal lesions. Presented at the Connective Tissue Oncology Society 9th Annual Scientific Meeting, Barcelona, Spain, Nov 6-8, 2003.

Personal correspondence with Dr. Christopher Fletcher, MD, FRCPath Professor and Director of Surgical Pathology Brigham & Women's Hospital Boston, MA

Additional references:

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Development and Revision History

This guideline was reviewed and endorsed by the Alberta Sarcoma Tumour Team. Members include surgical oncologists, radiation oncologists, medical oncologists, radiologist, nurses, pathologists, and pharmacists. Evidence was selected and reviewed by a working group comprised of members from the Alberta Tumour Teams, external participants identified by the Working Group Lead, and a methodologist from the Guideline Resource Unit. A detailed description of the methodology followed during the guideline development process can be found in the Guideline Resource Unit Handbook.

This guideline was originally developed in 2020.

Levels of Evidence

I	Evidence from at least one large randomized, controlled trial of good methodological quality (low potential for bias) or meta-analyses of well-conducted randomized trials without heterogeneity
II	Small randomized trials or large randomized trials with a suspicion of bias (lower methodological quality) or meta-analyses of such trials or of trials with demonstrated heterogeneity
III	Prospective cohort studies
IV	Retrospective cohort studies or case-control studies
V	Studies without control group, case reports, expert opinion

Strength of Recommendations

A	Strong evidence for efficacy with a substantial clinical benefit; strongly recommended
B	Strong or moderate evidence for efficacy but with a limited clinical benefit; generally recommended
C	Insufficient evidence for efficacy or benefit does not outweigh the risk or the disadvantages (adverse events, costs, etc.); optional
D	Moderate evidence against efficacy or for adverse outcome; generally not recommended
E	Strong evidence against efficacy or for adverse outcome; never recommended

Maintenance

A formal review of the guideline will be conducted in2021. If critical new evidence is brought forward before that time, however, the guideline working group members will revise and update the document accordingly.

Abbreviations

AHS, Alberta Health Services; CCA, CancerControl Alberta

Disclaimer

The recommendations contained in this guideline are a consensus of the Alberta Provincial Sarcoma Tumour Team and are a synthesis of currently accepted approaches to management, derived from a review of relevant scientific literature. Clinicians applying these guidelines should, in consultation with the patient, use independent medical judgment in the context of individual clinical circumstances to direct care.

Funding Source

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All cancer drugs described in the guidelines are funded in accordance with the Outpatient Cancer Drug Benefit Program, at no charge, to eligible residents of Alberta, unless otherwise explicitly stated. For a complete list of funded drugs, specific indications, and approved prescribers, please refer to the *Outpatient Cancer Drug Benefit Program Master List*.

Conflict of Interest Statements

Dr. Carolyn O'Hara has nothing to disclose.

Derek Tilley has nothing to disclose.