

Liver Biospy (Medical Short Stay Unit): Care of Patient

Site Applicability

SPH and MSJ Short Stay Units/Interventional Radiology

Practice Level

Registered Nurses who have received orientation to and work in Medical Short Stay units

Need to Know

Ultrasound-guided percutaneous liver biopsies are commonly used for diagnosing and staging many chronic liver diseases (CLD's), diagnosing hepatomegaly, persistently abnormal liver function tests, suspected systemic conditions such as sarcoidosis / amyloidosis or suspected primary or metastatic tumors of the liver.

Bleeding is the most common complication from liver biopsy. Post procedure assessment and observation by an RN is necessary to mitigate injury from procedural complications, therefore the patient should be placed on their right side, to help reduce risk of bleeding from the wound site.

Prior to the biopsy, ensure the patient is not on oral anticoagulants/aspirin and that a complete blood count, INR, PTT, and platelet count has been obtained.

Many patients experience right upper quadrant abdominal pain with radiation to the right shoulder. This is due to a small amount of blood loss from the puncture site in the liver. This pain may last from minutes to hours and should be a cause for increased vigilance, but not excessive concern, unless accompanied by other signs of blood loss, peritoneal irritation or fever.

Protocol

1. Radiology (prior to transfer to MSSU):
 - a. Patients receiving procedural sedation during procedure must meet the discharge from monitoring criteria in Radiology prior to transfer to MSSU ([Appendix A](#)). Modified Aldrete Score of **8** in criteria 1 to 5 with a minimum score of **2** in respiration and **1** in O₂ saturation
 - b. If reversal agent is administered, the patient is to stay in radiology for a minimum of 120 minutes (2 hours) for monitoring.
 - c. Radiologist/Fellow will enter post procedure orders under "*IR Post Procedure (Multiphase)*" PowerPlan.
 - d. Radiology RN to give telephone or in-person report to MSSU RN to highlight adverse events, patient care and hemodynamics.

2. MSSU:

- a. MSSU RN conducts the following assessment and appropriate interventions:

Assessment

	Frequency	Criteria	Assessment
Vital Signs	Q15 MIN x 1 hour Q30 MIN x 1 hour Q1H-if patient not discharged from MSSU 2 hours post procedure	RR SpO ₂ BP Heart rate Temperature Pain	Monitor and assess for signs and symptoms of pneumothorax (e.g. chest pain with sudden onset, chest tightness, shortness of breath, rapid heart rate / breathing). If patient receiving O ₂ , wean until patient returns to baseline saturation (See: B-00-13-1009 - Oxygen Therapy Acute Care). Notify the physician and return to Q15 minute checks if any of the following occur: <ul style="list-style-type: none"> Decreasing level of consciousness or seizure activity SpO₂ less than 92% despite increased oxygen delivery Notify physician if patient unable to achieve recovery criteria.
Dressing and Site	Q15 MIN x 1 hour Q30 MIN x 1 hour Q1H if patient not discharged from MSSU 2 hours post procedure	Assess for pain, abdominal distension or guarding	Patients typically experience some right upper quadrant pain/discomfort post procedure. If it is excessive or increases, call physician and administer analgesia as prescribed
Activity		Position on right side for 2 hours Ensure side rails are up and call bell is in reach Patient may drink post procedure	Maintain 1 hours of bed rest post procedure to minimize possibility of complications

Discharge from MSSU

- Patients are usually discharged 2 hours post procedure after receiving written and verbal instructions from MSSU RN and

- When MSSU/OPAT Discharge from Facility Criteria are met

Documentation

Document all assessments and interventions in the patient record

- Cerner free text Interdisciplinary notes:
 - Time patient received onto unit.
 - Assessments, interventions, any complications post procedure.
 - Discharge criteria met and patient teaching.
- Interactive View and I&O menu
 - Vital signs
 - Pain assessment
- MAR
 - All medications administered
- Discharge Check List via AdHoc toolbar and Adult Additional Assessment folder.

Patient and Family Education

When patient &/or family member are able to understand, provide discharge instructions verbally and in writing (Liver Biopsy instruction pamphlet ED.200.L751.PHC) including:

- Do not drive an automobile or operate dangerous machinery for 24 hours.
- Do not consume alcohol, or take sleeping pills, or medications that cause drowsiness for 24 hours.
- If nausea occurs, take clear fluids only then progress diet to solids as tolerated.
- Take medications as directed by physician on discharge.

A responsible adult must be present to provide transportation for patient upon discharge.

Related Documents

1. [B-00-13-10046](#) - Procedural Sedation in Clinics and Procedure Rooms
2. [B-00-13-10184](#) - Discharge from Facility Criteria MSSU/OPAT

References

1. Bravo, A., Sheth, S., Chopra, S. (2013). Percutaneous, fine-needle aspiration, and laparoscopic liver biopsy. *Up to Date*. Retrieved from <http://www.uptodate.com>
2. Hall J (2008) Identifying a research-based post-procedure observation period for outpatients undergoing percutaneous liver biopsy. *Journal of Radiological Nursing*, (27) 90-95
3. Hoffman, A., Rahman, F., Murthy, S., Galle, P.R., & Kiesslich, R., (2012). Mini Laparoscopy in the Endoscopy Unit, *Current Opinion in Gastroenterology*, (28), 461-466.

4. Kramskay, R., Tansky, A., Eisenberg, E., Veitsman, E., & Baruch, Y., (2011). Prophylactic analgesia before percutaneous liver biopsy: a clinical comparative study, *European Journal of Gastroenterology & Hepatology*, (11), 782-789.
5. Rockey, D. C., Caldwell, S. H., Goodman, Z. D., Nelson, R. C., & Smith, A. D. (2009). Liver biopsy. *Hepatology*, 49(3), 1017-1044.

Appendices

[Appendix A](#): Modified Aldrete Recovery Scoring and Discharge Criteria

Appendix A: Modified Aldrete Recovery Scoring and Discharge Criteria

Criteria for Discontinuing from One to One monitoring

- Modified Aldrete score for **Respirations** must be **2**; AND
- Modified Aldrete score for **Oxygen Saturation** must be **1 or greater**; AND
- **Total** Modified Aldrete score must be **8 or greater**.

Criteria for Discharge or Transfer from Procedure Clinic / Area

- 30 minutes after the last dose of sedation or analgesia is given; AND
- 120 minutes after the last dose of IV reversal agent administered (if given); AND
- **Total** Modified Aldrete score must be **10**; AND
- Nausea and Vomiting must be acceptable to patient; AND
- Pain must be acceptable to patient; AND
- Dressing/operative site is dry or requires extra padding but marked and not increasing; hematoma present but not growing. Indication of potential internal bleeding absent.

Modified Aldrete Scale

Category	Criteria	Point Value
Respirations	Able to deep breath and cough freely	2
	Dyspnea or limited breathing	1
	Apneic	0
Oxygenation	Able to maintain SpO ₂ greater than 92% on room air	2
	Requires supplemental oxygen to maintain SpO ₂ greater than 90%	1
	SpO ₂ below 90% even with supplemental oxygen	0
Circulation	Blood pressure +/- 20mmHg pre-procedure value	2
	Blood pressure +/- 20mmHg to 50mmHg pre-procedure value	1
	Blood pressure +/- greater than 50mmHg of pre-procedure value	0
Level of Consciousness	Awake and oriented	2
	Wakens with stimulation	1
	Not responding	0
Movement	Moves 4 limbs on own	2
	Moves 2 limbs on own	1
	Moves 0 limbs on own	0

Persons/Groups Consulted:

Nurse Educator, Surgery Program

Nurse Educator, Medicine Program.

Developed By:

Clinical Nurse Leader, MSSU, OPAT

Clinical Nurse Leader/ Nurse Educator, Interventional Radiology

Revised by:

CNL MSSU; OPAT; SCIG , SPIN Clinics; Community IV Infusion Program, IV Therapy

CNL/Nurse Educator Interventional Radiology

Initial Effective Date:	NOV-1994
Posted Date:	23-MAY-2023
Last Revised:	23-MAY-2023
Last Reviewed:	23-MAY-2023
Approved By:	PHC
	Professional Practice Standards Committee
Owners:	PHC
	Medical Short Stay/Interventional Radiology