Complete Summary

GUIDELINE TITLE

Procedure guideline for hepatic and splenic imaging 3.0.

BIBLIOGRAPHIC SOURCE(S)

Royal HD, Brown ML, Drum DE, Nagle CE, Sylvester JM, Ziessman HA. Procedure guideline for hepatic and splenic imaging, 3.0. Reston (VA): Society of Nuclear Medicine; 2003 Jul 20. 5 p. [10 references]

GUIDELINE STATUS

This is the current release of the guideline.

This guideline updates a previous version: Society of Nuclear Medicine. Procedure guideline for hepatic and splenic imaging, 2.0. Reston (VA): Society of Nuclear Medicine; 1999 Feb. 16 p. (Society of Nuclear Medicine procedure guidelines; no. 2.0).

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SCOPE

DISEASE/CONDITION(S)

- Hepatic lesions, such as focal nodular hyperplasia
- Liver disease
- Cavernous hemangioma of the liver
- Splenic conditions, including congenital asplenia or polysplenia

GUIDELINE CATEGORY

Diagnosis
Evaluation

CLINICAL SPECIALTY

Nephrology
Nuclear Medicine
Pediatrics
Radiology

INTENDED USERS

Allied Health Personnel
Physicians

GUIDELINE OBJECTIVE(S)

To assist nuclear medicine practitioners in recommending, performing, interpreting, and reporting the results of hepatic and splenic imaging studies

TARGET POPULATION

Adults or children with suspected hepatic or splenic disorders

INTERVENTIONS AND PRACTICES CONSIDERED

Hepatic and splenic imaging

MAJOR OUTCOMES CONSIDERED

Sensitivity, specificity, and utility of hepatic and splenic imaging

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Hand-searches of Published Literature (Primary Sources)
Hand-searches of Published Literature (Secondary Sources)
Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

Literature searches were performed. In addition, references known to experts and references from the nuclear medicine community were considered.

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Not stated

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Not applicable

METHODS USED TO ANALYZE THE EVIDENCE

Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

Drafts of the guideline were submitted to members of the Guideline Development subcommittee (methodologists) and the Task Force (subject experts). These reviewers indicated on a line-by-line basis any suggestions or recommendations for the revision of the guideline. The percentage of agreement for all reviewers was calculated for each revision and compiled by the Society of Nuclear Medicine (SNM) central office. It is expected that the percentage of agreement will increase with each revision.

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

Internal Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

When the Task Force and Guideline Development Subcommittee completed their edits, draft procedure guidelines were distributed to the Society of Nuclear Medicine (SNM) Sample Review Group for comment. (The SNM Sample Review

Group is a cross-section of approximately 100 nuclear medicine practitioners representing every field of specialization).

The guideline was approved by the SNM Commission on Health Care Policy, the Board of Directors, and the House of Delegates.

The updated guideline was approved July 20, 2003.

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

Background Information and Definitions

A. Liver-spleen imaging is performed after the injection of a ^{99m}Tc-labeled colloid that has been rapidly phagocytized by the reticuloendothelial cells of the liver, spleen, and bone marrow.
B. Liver blood pool imaging is performed after the injection of ^{99m}Tc-labeled red blood cells for the detection of cavernous hemangiomas of the liver.
C. Hepatic perfusion studies are performed following the injection of ^{99m}Tc-macroaggregated albumin (MAA) through a hepatic artery catheter to determine that intra-arterially administered agents are delivered optimally.
D. Splenic imaging is performed after the injection of ^{99m}Tc-labeled heat-damaged red blood cells. Damaged red blood cells are selectively taken up by functioning splenic tissue.

Common Indications

A. Liver-Spleen Imaging

This study can be used for determining the size and shape of the liver and spleen as well as for detecting functional abnormalities of the reticuloendothelial cells of these organs. Specifically, these studies are occasionally performed:

1. For suspected focal nodular hyperplasia of the liver. These lesions often have normal or increased uptake on sulfur colloid imaging.
2. To assess the function of the reticuloendothelial system in patients with suspected liver disease. The decision to perform a liver biopsy or to continue treatment with a hepatotoxic agent may be influenced by the severity of liver disease that is seen on liver-spleen imaging.

B. Liver Blood Pool Imaging

This test is highly specific for cavernous hemangiomas of the liver. The sensitivity for detecting large lesions of the liver (>2 to 3 cm) is also high. Hemangiomas as small as 0.5 cm may be detected with single-positron emission computed tomography (SPECT) using a multihead camera.

C. Hepatic Perfusion Imaging

This study is useful for demonstrating that hepatic artery catheters used to infuse chemotherapeutic or therapeutic radiolabeled microsphere agents are positioned optimally to perfuse liver tumors and to avoid perfusion of normal extrahepatic tissues (e.g., stomach).

D. Splenic Imaging

This study is used for detecting functional splenic tissue. This study is often performed:

1. In children to rule out congenital asplenia or polysplenia
2. In adults whose thrombocytopenia has been treated previously with splenectomy
3. For characterizing an incidentally noted mass as functional splenic tissue

Procedure

The detailed procedure recommendations in the guideline address the following areas: patient preparation; information pertinent to performing the procedure (i.e., important data that the physician should have about the patient at the time the exam is performed and interpreted); precautions; information regarding the radiopharmaceutical (i.e., ranges of administered activity, organ receiving the largest radiation dose, effective dose), image acquisition; interventions; processing; interpretation/reporting; quality control, and sources of error.

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of evidence supporting the recommendations is not specifically stated.

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

The intent of the procedure guideline is to describe hepatic and splenic imaging, in order to maximize the diagnostic information obtained in the study while minimizing the resources that are expended.

POTENTIAL HARMS

Not stated

QUALIFYING STATEMENTS

QUALIFYING STATEMENTS

- The Society of Nuclear Medicine has written and approved guidelines to promote the cost-effective use of high quality nuclear medicine procedures. These generic recommendations cannot be applied to all patients in all practice settings. The guidelines should not be deemed inclusive of all proper procedures or exclusive of other procedures reasonably directed to obtaining the same results. The spectrum of patients seen in a specialized practice setting may be quite different than the spectrum of patients seen in a more general practice setting. The appropriateness of a procedure will depend in part on the prevalence of disease in the patient population. In addition, the resources available to care for patients may vary greatly from one medical facility to another. For these reasons, guidelines cannot be rigidly applied.
- Advances in medicine occur at a rapid rate. The date of a guideline should always be considered in determining its current applicability.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Living with Illness

IOM DOMAIN

Effectiveness

IDENTIFYING INFORMATION AND AVAILABILITY

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ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

1999 Feb (revised 2003 Jul 20)

GUIDELINE DEVELOPER(S)

Society of Nuclear Medicine, Inc - Medical Specialty Society

SOURCE(S) OF FUNDING

Society of Nuclear Medicine (SNM)

GUIDELINE COMMITTEE

Task Force

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

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FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

GUIDELINE STATUS

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GUIDELINE AVAILABILITY

Electronic copies: Available from the Society of Nuclear Medicine (SNM) Web site.

Print copies: Available from SNM, Division of Health Care Policy, 1850 Samuel Morse Dr, Reston, VA 20190-5316; Phone: 1-800-513-6853 or 1-703-326-1186; Fax: 703-708-9015; E-Mail: ServiceCenter@snm.org.

AVAILABILITY OF COMPANION DOCUMENTS

The following are available:

- Society of Nuclear Medicine. Procedure guideline for guideline development. Reston (VA): Society of Nuclear Medicine; 2001 Jun (version 3.0). Electronic copies: Available from the Society of Nuclear Medicine Web site.
- Society of Nuclear Medicine. Performance and responsibility guidelines for NMT. Reston (VA): Society of Nuclear Medicine; 2003. Electronic copies: Available from the Society of Nuclear Medicine Web site.

Print copies: Available from SNM, Division of Health Care Policy, 1850 Samuel Morse Dr, Reston, VA 20190-5316; Phone: 1-800-513-6853 or 1-703-326-1186; Fax: 703-708-9015; E-Mail: ServiceCenter@snm.org.

PATIENT RESOURCES

None available

NGC STATUS

This summary was completed by ECRI on July 20, 1999. It was verified by the guideline developer as of August 5, 1999. This NGC summary was updated by ECRI on April 14, 2005.

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