Reinterpretation of Hepatopancreaticobiliary Imaging Exams by Subspecialty Radiologists: Assessment of Clinical Impact, Radiologist Peer Learning, and Referring Physician Satisfaction

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FINANCIAL DISCLOSURES

**Presenter:** Gregory S. Photopoulos

No disclosures

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No disclosures

**Co-author:** Dr. Sharon E. Clarke

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**Co-author:** Dr. Andreu F. Costa

Bayer Inc.: Financial Relationship
BACKGROUND

- Imaging of hepatopancreaticobiliary (HPB) diseases is often complex
- Referring physicians often request reinterpretations by subspecialty radiologists
- High discrepancy rates (19.9%-68.9%) for HPB imaging reinterpretations [1-4]
- HPB reinterpretations impact clinical management [1-3]
- Potential of reinterpretations for radiologist peer learning has not been evaluated

Fig. 1 Graphic displaying the flow of reinterpretation reports at the study centre

OBJECTIVES

• To determine the discrepancy rate of HPB reinterpretations and the impact of HPB reinterpretations on:
  1. Clinical management
  2. The potential for peer learning for radiologists that issued primary reports
  3. Referring physician satisfaction

STUDY DESIGN

• Quality Improvement Initiative approved by centre’s Quality Improvement & Safety Council
  • Formal REB approval waived
  • Compliant with Personal Health Information Act
• Single academic centre
• Reinterpretation referrals from 3 provinces
• Retrospective, cross-sectional study

Fig. 2 Canadian Maritime provinces.
Peter Hermes Furian: Adobe Stock
METHODS

Imaging Reinterpretation:

- HPB reinterpretations issued by 2 abdominal subspecialty radiologists between March 2021 and August 2022
- Level of agreement with the primary report was graded according to the American College of Radiology (ACR) RADPEER® System (Fig. 3)
  - Used to determine discrepancy rate
  - RADPEER scores kept confidential and not used for peer learning

EMR & PACS Review:

- Patient demographics
  - Age
  - Sex
- Mean time elapsed between reports
- Change in clinical management
  - Yes / No / Unavailable

Survey Design:

- 5-point Likert scale & open-ended feedback questions
- Anonymous online completion, open for 2 weeks

1. Primary radiologists
   - Satisfaction with receiving reinterpretation reports
   - Potential value for peer learning & quality assurance
2. Referring physicians
   - Satisfaction with reinterpretation service
   - Utility of formal reinterpretation reports

Fig. 3 ACR RADPEER System [5]
RESULTS

Study Population
- Mean patient age: 63 ± 14 years
- Patient sex: 145/250 (58%) male
- Mean time elapsed between reports: 62 ± 120 days

![Study flow diagram](image)

Table 1. Distribution of RADPEER scores based on change in clinical management

<table>
<thead>
<tr>
<th>Change in Management</th>
<th>All Groups</th>
<th>RADPEER 1</th>
<th>RADPEER 2</th>
<th>RADPEER 3</th>
<th>Adequate Clinical Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total (n,%)</td>
<td>250 (100)</td>
<td>131 (52.4)</td>
<td>86 (34.4)</td>
<td>33 (13.2)</td>
<td>213 (85)</td>
</tr>
<tr>
<td>Change</td>
<td>75 (30.0)</td>
<td>4 (3.1)</td>
<td>44 (51.2)</td>
<td>27 (81.8)</td>
<td>75 (35.2)</td>
</tr>
<tr>
<td>No change</td>
<td>138 (55.2)</td>
<td>102 (77.9)</td>
<td>35 (40.7)</td>
<td>1 (3.0)</td>
<td>138 (64.8)</td>
</tr>
<tr>
<td>Not available</td>
<td>37 (14.8)</td>
<td>25 (19.1)</td>
<td>7 (8.1)</td>
<td>5 (15.2)</td>
<td>--</td>
</tr>
</tbody>
</table>

Change in Management
- 213/250 (85%) reinterpretations with adequate clinical data for assessment of change in management
- 75/213 (35%) led to a change in management (95% RADPEER 2 or 3)
**SURVEYS: QUANTITATIVE RESULTS**

**Primary Radiologists**
- Response rate: 36/86 (42%)

**Referring Physicians**
- Response rate: 7/18 (39%)

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**Fig. 5** Primary radiologist survey stacked bar chart

- Would like to receive exam reinterpretations
  - Strongly disagree: 2
  - Disagree: 11
  - Neither agree nor disagree: 23

- RADPEER scores are helpful
  - Strongly disagree: 3
  - Disagree: 11
  - Neither agree nor disagree: 15
  - Agree: 7

- Reinterpretations change practice or influence CME
  - Strongly disagree: 3
  - Disagree: 10
  - Neither agree nor disagree: 19
  - Agree: 4

- Want to discuss cases with subspecialty radiologists
  - Strongly disagree: 2
  - Disagree: 14
  - Neither agree nor disagree: 13
  - Agree: 7

- Reinterpretations promote peer learning & quality assurance
  - Strongly disagree: 1
  - Disagree: 10
  - Neither agree nor disagree: 24

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**Fig. 6** Referring physician survey stacked bar chart

- Reinterpretations valued in complex HPB disease management
  - Strongly disagree: 7

- Reinterpretations change or clarify clinical approach
  - Strongly disagree: 1
  - Disagree: 6

- Reinterpretation service should be expanded
  - Strongly disagree: 1
  - Disagree: 1
  - Neither agree nor disagree: 5

- Reinterpretations promote peer learning & quality assurance
  - Strongly disagree: 1
Positive Feedback

- "Feedback is very valuable."
- "Great program - should continue and expand"
- "Love receiving notification of the 2nd opinion, really appreciate it, please continue!"
- "Extremely valuable"

Constructive Feedback

- "Would appreciate getting the feedback sooner"
- "Is there a way to [...] give feedback the other way around?"

Positive Feedback

- "Very valuable"
- "Have changed management, avoided surgery, found metastatic disease and are invaluable"
- "Extremely informative and helpful in patient management"

Constructive Feedback

- "Current limits on radiology [...] to review cases limits the full value we could obtain from HPB MTB"
- "Why in pathology is there the culture of having a second opinion review for challenging situations, but it doesn't seem to be the case for radiology?"
DISCUSSION

• 119/250 (48%) HPB reinterpretations were associated with a discrepancy
• 75/213 (35%) were associated with a change in clinical management
• Reinterpretation reports are:
  • Overall, well received by radiologists and referring physicians
  • Perceived as valuable for peer learning
• Study limitations:
  • Retrospective design and single institution
  • Reinterpretations are subjective and at risk of bias
• In conclusion, HPB imaging reinterpretations help support peer learning for radiologists and patient management for referring physicians
THANK YOU! QUESTIONS?

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REFERENCES


