

Case Report/Case Series in Surgical Pathology: Are They Still Valuable?



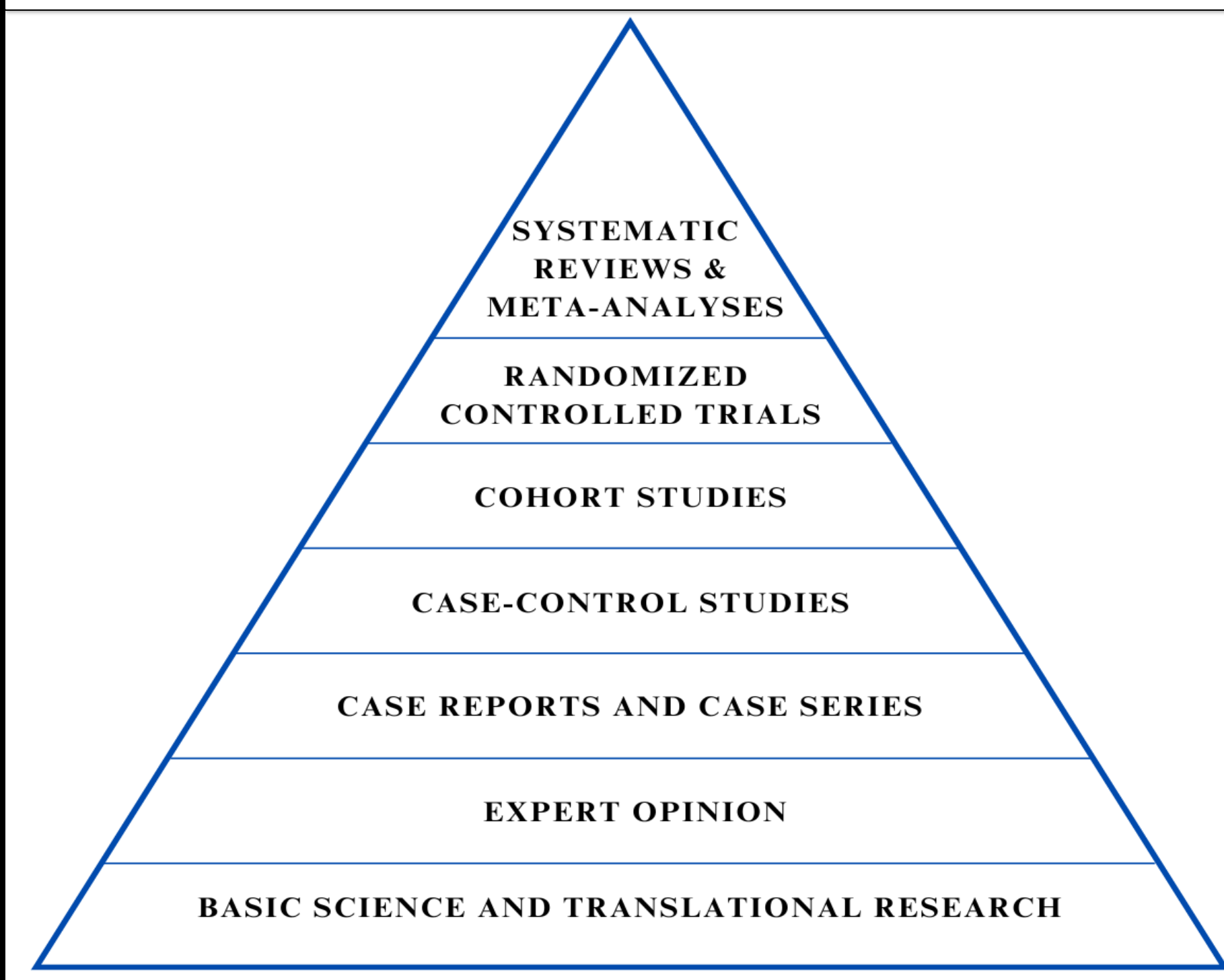
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Introduction

- Case reports and case series are vital tools in surgical pathology research, serving as a foundation for documenting rare cancers, novel treatments, and unexpected outcomes.
- Though lower on the evidence hierarchy (Figure 1), they are crucial for hypothesis generation and advancing personalized medicine.
- Case reports focus on individual patients while case series identify patterns in multiple cases.
- Both formats are critical for rare diseases and early discovery and remain valuable in pathology (Table 1).

Figure 1. Hierarchy of Evidence



Objectives

- Explore the role of case reports and case series in the field of surgical pathology.
- Provide guidelines for high-quality reporting.
- Demonstrate the impact of case reports/series on clinical practice and research.

Figure 2. Format of a High-Quality Case Report

Title	Introduction	Case Presentation	Discussion
<ul style="list-style-type: none"> • Brief • Concise • Specific • Descriptive 	<ul style="list-style-type: none"> • Describe the disease/condition and the hypothesis 	<ul style="list-style-type: none"> • Detailed • Chronological order 	<ul style="list-style-type: none"> • Connects the results to the current literature

Case Report

- Case reports provide detailed documentation of individual cases, offering insights into rare conditions and novel therapies.
- Key Advantages:
 - Detailed and rapid documentation of rare cases.
 - Educational value for clinicians and trainees.
 - Useful for identifying rare side effects and treatment responses.
- Challenges:
 - Publication bias toward positive findings.
 - Limited generalizability to broader patient populations.
- Factors of a high quality case report (Figure 2; Table 2)

Case Series

- Case series expand on case reports by examining multiple patients with similar presentations, diagnoses, or treatments.
- Value in Surgical Pathology:
 - Identifying patterns in rare conditions.
 - Providing early signals for emerging trends.
 - Generating hypotheses for larger studies.
- Key Factors for High Quality case series (Table 2):
 - Clear objectives and systematic data collection.
 - Well-defined inclusion/exclusion criteria.
 - Consecutive patient enrollment.

Table 1. Examples of the different roles of Case Reports/Series in Surgical Pathology/Medical Oncology Literature¹

Role	Example
Describe a new phenotype or genotype of disease	VEXAS syndrome– Case Series ²
Recognize a known or common manifestation of a rare neoplasm	Sinonasal Sarcoma – Case Series ³
Recognize a rare manifestation of a common neoplasm	Malignant Melanoma Arising from a Spinal Nerve Root – Case Report ⁴
Describe a new pathogen (microbe, virus or environmental exposure) associated with a neoplasm	Detection of Merkel Cell Carcinoma Polyomavirus in Mucosal Merkel Cell Carcinoma – Case Report ⁵
Describe unknown adverse effect of an existing drug	Pembrolizumab-Induced Giant Cell Arteritis in the Setting of Urothelial Carcinoma – Case Report ⁶
Describe a novel treatment for a known neoplasm	Pulmonary Sarcomatoid Carcinoma - Tislelizumab and Anlotinib – Case Report ⁷
Elucidate the mechanism of a neoplasm	Multiple Primary Malignant Neoplasms – Case Series ⁸
To remind or educate	Pneumothorax Induced by Immune Checkpoint Inhibitors – Case Report ⁹

Table 2. Guidelines for High Quality Reporting

CARE Guidelines¹⁰ (Case Reports):

- **Abstract:** Concise introduction to the clinical question.
- **Introduction:** Context and relevant literature.
- **Case Description:** Detailed, chronological, patient-focused narrative.
- **Discussion:** Connect results to existing knowledge, emphasizing innovation and limitations.

Case Series Guidelines:

- Clear inclusion/exclusion criteria.
- Consecutive enrollment to reduce bias.
- Systematic data collection and robust analysis.

Discussion

- Case reports and case series remain essential for advancing pathology research, especially in the era of personalized medicine. They:
 - Highlight rare conditions and novel treatments.
 - Inspire larger studies and clinical trials.
 - Refine existing therapies and inform clinical decision-making.
- Despite challenges like publication bias and limited generalizability, their value in uncovering early signals and generating hypotheses is unparalleled.

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