



## Original Article

# Characteristics of claims in the management of septic arthritis in Japan: Retrospective analyses of judicial precedents and closed claims

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## Abstract

**Background:** Septic arthritis (SA) cases can result in claims or litigation because of poor prognosis even if it is unavoidable. Although these claims or litigation are useful for understanding causes and background factors of medical errors, the characteristics of malpractice claims associated with SA remain undetermined in Japan. This study aimed to increase our understanding of malpractice claims in the clinical management of SA.

**Methods:** We analyzed 6 civil precedents and 16 closed claims of SA from 8530 malpractice claims processed between July 2004 and June 2014 by the Tokyo office of Sompo Japan Nipponkoa Insurance, Incorporated. We also studied 5 accident and 21 incident reports of SA based on project data compiled by the Japan Council for Quality Health Care.

**Results:** The rate of negligence was 83.3% in the precedents and 75.0% in closed claims. Two main malpractice claim patterns were revealed: SA in a lower extremity joint following sepsis caused by methicillin-resistant *Staphylococcus aureus* in newborns and SA in an injection site following joint injection. These two patterns accounted for 83.3% and 56.3% of judicial cases and closed claim cases, respectively. Breakdowns in care process of accident and incident reports were clearly differentiated from judicial cases or closed claim cases (Fisher's exact test,  $P < 0.001$ ).

**Conclusion:** It is important to pay particular attention to SA following sepsis in newborns and to monitor for any signs of SA after joint injection to ensure early diagnosis. Analysis of both malpractice claims and accident and incident reports is essential to ensure a full understanding of the situation in Japan.

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**Keywords:** Closed claim; Malpractice; Precedence; Septic arthritis

## 1. Introduction

In 1999, the Institute of Medicine published a sensational report, “*To Err is Human: Building a Safer Health System*,” suggesting that medical errors could be responsible for between 44,000 and 98,000 deaths of hospitalized patients annually in the United States.<sup>1</sup> This report served as a wake-up call for many countries, including Japan. Recently, it was

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reported that medical errors are not only traumatic to patients and health care providers, but also have a considerable negative impact on society and the economy.<sup>2–4</sup> Thus, there is a global need to accurately identify medical errors and implement appropriate preventative measures to reduce the number of cases in all medical fields.

Septic arthritis (SA) refers to acute monoarthritis caused mainly by common bacteria such as *Staphylococci* or *Streptococci*. The incidence of SA in adults is only estimated at approximately four to eight cases per 100,000 annually. Despite advances in medical treatment, SA can potentially result in severe morbidity or mortality, estimated to be higher than 10%.<sup>5–7</sup> Therefore, any suspected case of SA demands immediate medical attention and surgical intervention.<sup>8,9</sup> SA incidence in children is approximately eight cases per 100,000 children annually, with high prevalence in those aged  $\leq 5$  years.<sup>10</sup> Although SA in children is not common, it should not be underestimated because it can be associated with sepsis and result in severe dysfunction or death if not treated quickly and correctly.<sup>11–13</sup> In recent years, Methicillin-resistant *Staphylococcus aureus* (MRSA) has become increasingly common as a causative bacteria of SA.<sup>14–17</sup>

SA cases can result in claims or litigation in situations where patients and their families find it difficult to accept an unfavorable prognosis such as severe dysfunction or death. Unlike United State and Europe, previous studies of medical errors in Japan have typically been limited to the analysis of publicly accessible judicial precedents, largely because Japan does not possess a comprehensive reporting system for medical errors.<sup>18–23</sup> The situation in Japan has resulted in a dearth of previous studies on medical errors associated with the clinical management of SA. In Japan, medical errors are normally treated within facilities with the corporation of malpractice insurers. Insurer claim files contained various information allowing for an in-depth analysis of medical errors. Here, we analyzed not only judicial precedents but also SA-related closed claims provided by Sompo Japan Nipponkoa Incorporated (SJNK), a leading insurer in Japan. It will reveal the context and characteristics of medical errors associated with SA leading to a claim or litigation. We also analyzed accident and incident reports (IRs) collected by the Japan Council for Quality Health Care (JCQHC). Our overall aim was to increase our understanding of medical errors in the clinical management of SA and explore its potential implications for medical error prevention.

## 2. Methods

### 2.1. Judicial precedents

Judicial precedents related to SA were retrieved using two private online search systems: Westlaw Japan (<http://www.westlawjapan.com/>) and Hanreihisho (<http://www.hanreihisho.com/hhi/>). We found six civil judicial precedents related to SA by searching for both civil and criminal cases using a Boolean search strategy with the query terms “septic arthritis” and “negligence” and (“hospital” or “clinic”) and

(“indemnity” or “accusation”). Duplicates and cases where management related to SA was not the primary reason for litigation were excluded. These search criteria yielded 19 cases; 13 cases were excluded as they had no primary relation to the diagnosis and management of SA.

### 2.2. Closed claims

The present study also evaluated SA-related claims closed between July 2004 and June 2014. The closed claims were provided by SJNK, which covers more than 70% of all medical facilities in Japan, including various types of hospitals and clinics. The present study was conducted in the Tokyo headquarters office of SJNK, which handles the highest number of claims within the company as a centralized library of claims for all of Japan. A claim was defined as a written statement demanding compensation for injuries caused by medical practice.<sup>24</sup> Claims were classified as closed when they had been dropped, dismissed, or settled by monetary compensation. Claim files provided by the insurer contained various information including initial reports from the insured party when the allegations arose; legal reports; expert opinions; and relevant medical records from medical facilities. The total number of closed claims processed in the Tokyo headquarters office between July 2004 and June 2014 was 8530, of which 16 closed claims were associated with SA. We searched claim cases using the same method as for judicial precedents.

### 2.3. Anonymity and ethics statement

Anonymity was preserved in the present study: all claim files underwent a contextual de-identification process before being received by the reviewers. This study complied with Japanese epidemiological study guidelines and was approved by the ethics committee of Teikyo University.

### 2.4. Accident and incident reports from the JCQHC

There were 5 accident reports (ARs) and 21 IRs related to SA between October 1, 2004 and April 30, 2016, according to the data in the Project to Collect Medical Near-Miss Adverse Event Information. The definition of ARs is the reports related to medical practice that resulted in patient's harm and the definition of IRs is the near miss reports related to medical error. ARs in this research were caused by medical error distinctively. These data are compiled by the JCQHC. All reports related to SA management are included in the analysis.

### 2.5. Statistical analysis

Descriptive statistics were computed regarding the various features of the judicial precedents and claim files. Reviewers identified the most fundamental allegations in each case and categorized them into different allegation types. The term “Medication” was defined as “a problem of pharmacotherapy following a diagnosis,” while “Medical Treatment” referred to “a problem of medical treatment other than pharmacotherapy

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