

Social Media as a Tool for Spinal Implant Identification

Insights from 100 Cases Analyzed in an Online Facebook Group

Robin M. Litten^a, Omar Zakieh^b, James F. Bathon^{b,c}, Byron F. Stephens^{b,*}

Abstract

Background: Social media platforms have become increasingly valuable tools for medical collaboration, allowing healthcare professionals to share knowledge and seek real-time guidance. The Spinal Implants Identification Facebook group is a specialized community where spine surgeons, providers, and industry representatives collaborate to identify spinal hardware, particularly in preparation for revision surgeries. Given the challenges of identifying implants from imaging alone, especially in complex cases, this group offers a unique avenue for peer consultation.

Objectives: This study aimed to characterize engagement patterns, assess response reliability, and explore clinical trends among spinal instrumentation cases posted in the group.

Methods: A retrospective observational review of 100 consecutive posts from the Spinal Implants Identification Facebook group was conducted. Posts were included if they contained adequate imaging and context for spinal implant discussion. Metrics recorded included time to first response, total number of responses, and whether responses were confirmed by the original author. Clinical data such as levels of fusion, instrumentation components, spinal alignment, pelvic parameters, and reported complications (e.g., pseudarthrosis and rod fractures) were analyzed.

Results: The mean response time was 278.7 ± 25.5 minutes, with 81.0% of posts receiving at least one response. Commonly involved levels were L4–L5 and L4–S1 (23.0% each), and the mean number of instrumented levels was 2.3 ± 2.5 . Pseudarthrosis was observed in 34.0% of cases and rod fractures in 5.0%. Interbody devices were used in 31.0% of cases. The mean lumbar lordosis was $48.2^\circ \pm 12.0^\circ$. The mean L4–S1 lordosis was $27.3^\circ \pm 9.3^\circ$, and the mean lumbar distribution index was 0.6 ± 0.15 . Pelvic parameters demonstrated a mean sacral slope of $35.0^\circ \pm 9.9^\circ$, pelvic tilt of $29.3^\circ \pm 9.7^\circ$, and pelvic incidence of $77.5^\circ \pm 10.3^\circ$.

Conclusions: Social media groups can serve as supplemental resources in spine care, supporting rapid implant identification and professional collaboration. However, variability in response reliability and limited clinical context underscore the need for cautious interpretation when applying these insights to patient care.

Keywords: online medical forums, revision spine surgery, spinal instrumentation

1. Introduction

Social media platforms like Facebook have become valuable forums for healthcare professionals to collaborate and share knowledge in specialized groups.^[1–3] One such group, the Spinal Implants Identification group, serves as a niche community of over 4000 members, where spine

surgeons, healthcare providers, and industry representatives can discuss spinal hardware and seek identification assistance for revision cases. The group's primary purpose is to facilitate efficient communication about spinal implants, enabling members to help one another identify specific types of instrumentation from images, sometimes in urgent clinical scenarios.

^a University of Tennessee Health Science Center, College of Medicine, Memphis, Tennessee, USA, ^b Department of Orthopaedic Surgery, Vanderbilt University Medical Center, Nashville, Tennessee, USA, ^c Vanderbilt University, School of Medicine, Nashville, Tennessee, USA.

* Correspondence: Byron F. Stephens, Department of Orthopedic Surgery, Vanderbilt University Medical Center, 719 Thompson Ln #23108, Nashville, TN 37204 (e-mail: byron.stephens@vumc.org).

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In revision spine cases, precise identification of existing implants is crucial for surgical planning, ensuring appropriate tools and techniques are available to address prior instrumentation and any associated complications.^[4] However, identifying spinal hardware based on imaging alone can be challenging due to the wide array of implant types, variations among manufacturers, and limited imaging visibility.^[4] The Spinal Implants Identification group provides a collaborative solution, allowing providers to benefit from the collective experience and knowledge of other specialists within a secure and specific setting.

The objective of this study is to characterize the patterns of engagement, response reliability, and clinical details related to spinal implant identification within this social media community. By analyzing 100 consecutive posts shared in the Spinal Implants Identification Facebook group, this study aims to evaluate the timeliness and accuracy of user responses, explore the reported complications of spinal instrumentation, and assess the potential of online forums as a supplementary resource for medical support and insight into spine care.

2. Methods

2.1. Study design

This retrospective observational study evaluated 100 consecutive posts from the Spinal Implants Identification Facebook group, in which members shared images related to spinal instrumentation and implants. Inclusion criteria required that posts contain adequate imaging and descriptive data pertinent to spinal instrumentation.

2.2. Variables

Interaction metrics were collected, including the time elapsed between the post's upload and the first response (time to response) and the total number of responses. Additionally, the study recorded whether any responses were confirmed by the original author. Radiographic variables included total instrumented levels, levels of fusion, lumbar lordosis (LL), L4–S1 lordosis, lumbar distribution index, sacral slope (SS), pelvic incidence, and pelvic tilt. All spinal measurements were completed using Surgimap. Where applicable, the study documented any levels with an interbody device and noted the presence of complications such as pseudarthrosis and rod fractures. Posts indicating the use of spinal cord stimulators or pain pumps were also noted.

2.3. Statistical analysis

Descriptive statistics were used to summarize the distribution of interaction metrics and radiographic variables. Continuous variables were reported as means with standard deviations. Categorical variables were expressed as frequencies and percentages. Response reliability was

defined by confirmation from the original post author, indicating agreement with the identification provided. Due to the retrospective and anonymous nature of the group, formal inter-rater reliability could not be assessed. All analyses were performed in SPSS Version 29.0.2.0 (IBM, Armonk).

2.4. Ethics

All images analyzed were publicly posted in the Spinal Implants Identification Facebook group and did not contain patient identifiers. No protected health information was accessed or recorded. The study was conducted in accordance with ethical standards for the use of publicly available, de-identified data.

3. Results

3.1. Engagement metrics

A total of 100 posts from the Spinal Implants Identification Facebook group, dated from October 19, 2023, to November 13, 2023, were analyzed. Each post contained a mean of 2 images. The mean time to response was 278.7 ± 25.5 minutes. Of the 100 posts analyzed, 81 received at least one response, while 19 posts did not receive any responses. The mean number of responses per post was 1.7 ± 1.6 , with most posts receiving a single response. See Table 1 for a summary of engagement metrics and clinical data.

3.2. Instrumentation and spinal levels

The mean total instrumented levels was 2.3 ± 2.5 , with the most frequent configuration involving a single level, specifically at L4–L5 or L4–S1, which each appeared in 23.0% of posts (Table 1).

Table 1
Summary of engagement and clinical data from Spinal Implants Identification group posts.

Variables	Value
Time to response (min), mean \pm SD	278.7 \pm 25.5
Number of responses per post, mean \pm SD	1.7 \pm 1.6
Mode of responses per post	1
Posts with no response, <i>n</i> (%)	19 (19.0%)
Posts with response, <i>n</i> (%)	81 (81.0%)
Levels involved, mean \pm SD	2.3 \pm 2.5
Most common levels involved, <i>n</i> (%)	L4–L5: 23 (23.0%) L4–S1: 23 (23.0%)
Lumbar lordosis (degrees), mean \pm SD	48.2 \pm 12.0
L4–S1 lordosis (degrees), mean \pm SD	27.3 \pm 9.3
Lumbar distribution index, mean \pm SD	0.6 \pm 0.15
Sacral slope (degrees), mean \pm SD	35.0 \pm 9.9
Pelvic tilt (degrees), mean \pm SD	29.3 \pm 9.7
Pelvic incidence (degrees), mean \pm SD	77.5 \pm 10.3
Number of instrumentation, mean \pm SD	10 \pm 4.3
Interbody device, <i>n</i> (%)	31 (31.0%)
Pseudarthrosis, <i>n</i> (%)	34 (34.0%)
Rod fracture, <i>n</i> (%)	5 (5.0%)
Spinal cord stimulator/pain pump, <i>n</i> (%)	10 (10.0%)
Images per post, mean \pm SD	2 \pm 0.6

3.3. Spinal and pelvic parameters

The mean lumbar lordosis measured 48.2 ± 12.0 degrees, while the mean L4–S1 lordosis was 27.3 ± 9.3 degrees. The mean lumbar distribution index was 0.6 ± 0.15 . Pelvic parameters demonstrated a mean sacral slope of 35.0 ± 9.9 degrees, a mean pelvic tilt of 29.3 ± 9.7 degrees, and a mean pelvic incidence of 77.5 ± 10.3 degrees (Table 1).

3.4. Instrumentation and complications

Cases involved a mean of 10 ± 4.3 instrumentation elements. Of the 100 posts, 31 cases involved the use of an interbody device. Pseudarthrosis was identified in 34 cases and rod fractures were noted in 5 cases. Additionally, 10 cases reported the presence of either a spinal cord stimulator or a pain pump. Figure 1 illustrates the incidence of each complication.

4. Discussion

This study aimed to highlight the utility of the Spinal Implants Identification Facebook group as a resource for spine surgeons and other healthcare professionals seeking rapid identification of spinal hardware. The analysis of 100 posts demonstrates that social media forums can serve as viable supplementary tools in clinical practice, particularly in addressing the challenges of spinal implant identification during revision surgery.

With a mean response time of 278.7 minutes (just over 4.5 hours), the data suggest reasonably prompt engagement, aligning with previous research that underscores social media's value in facilitating professional communication among healthcare professionals.^[5,6] While 81.0% of posts received at least one

response, the average of 1.7 responses per post suggests that the depth of discussion may be somewhat limited, despite high engagement. This may reflect the niche nature of the group, where expertise is concentrated among a smaller subset of highly knowledgeable participants. Studies on similar online forums have noted that engagement tends to be highest when posts include clear, high-quality imaging and concise questions.^[7] The observed prevalence of pseudarthrosis (34.0%) and rod fractures (5.0%) is consistent with rates reported in the literature.^[8–13] Similarly, the use of interbody devices in 31.0% of cases reflects their role in enhancing stability and promoting successful fusion in complex spine surgeries.^[14,15] The recorded lumbar lordosis and pelvic parameters, including a sacral slope of 35.0 degrees, closely align with values documented in the spinal alignment literature.^[16–18]

While this study explores a novel application of social media in healthcare, several limitations should be acknowledged. First, the retrospective design relies on self-reported confirmations of response accuracy by the original post authors, introducing potential bias due to variability in user engagement and the subjective interpretation of response validity. Confirmation by the original author was used as a proxy for response reliability; however, this method may not fully capture inter-rater agreement or independent verification. Future studies could incorporate blinded expert review or consensus panels to more rigorously assess identification accuracy. Additionally, the study is limited to a short observation period and focuses exclusively on a single Facebook group, potentially limiting the generalizability of the findings. A critical limitation is the lack of clinical context available for the cases discussed. Posts in the group often consist solely of images of spinal implants,

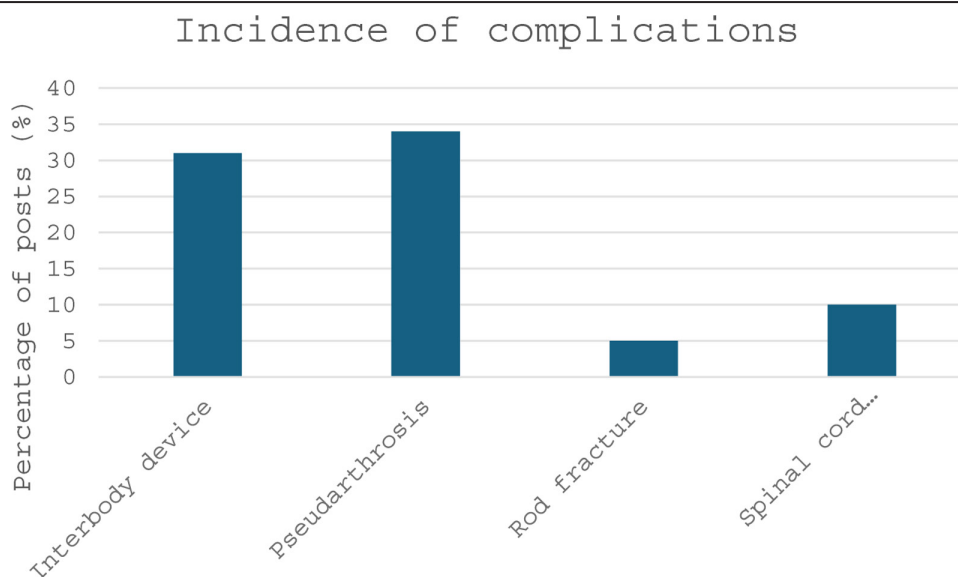


Figure 1. Incidence of complications in 100 consecutive Spinal Implants Identification Facebook group posts.

with minimal accompanying information about the patient's medical history, symptoms, imaging findings (e.g., magnetic resonance imaging), or surgical considerations. This absence of context restricts the ability of responders to provide fully informed recommendations and may affect the reliability and applicability of their input. Without these crucial details, the identification and suggested management of spinal implants are based primarily on visual cues rather than a comprehensive understanding of the clinical scenario. This limitation highlights the need for caution when applying advice from such forums to real-world clinical decisions. The voluntary nature of participation may also result in selection bias, potentially underrepresenting the group's full expertise or broader clinical practice. Future studies should explore more rigorous methods of validating response accuracy, include diverse platforms, and examine the role of artificial intelligence in automating implant identification. Assessing the clinical impact of these platforms, such as effects on operative planning or revision outcomes, would also provide further insight into their value.

5. Conclusions

This study provides insight into the use of a Facebook group as a platform for sharing about and identifying spinal implants. By systematically analyzing 100 posts, this analysis identified key factors influencing engagement and information exchange within the community. These findings highlight the varied complexities of spinal instrumentation cases, underscoring the importance of collaborative learning and support among experts. The data collected will serve as a foundation for future research aimed at optimizing spinal implant identification and enhancing clinical decision-making. As social media continues to evolve, its potential as a tool for professional development in orthopedics becomes increasingly evident, paving the way for more effective peer-to-peer communication and knowledge sharing in the field.

Acknowledgments

Not applicable.

Ethical statement

This study was in full compliance with the Vanderbilt IRB, and appropriate guidelines were followed.

Conflicts of interest

Byron F. Stephens receives institutional research funding from Globus, has received institutional research funding from Stryker, and is an editorial board member for the research journal *Spine Research*. The remaining authors have no conflicts of interest to disclose.

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Data availability statement

The datasets generated during and/or analyzed during the current study are publicly available but are also available from the corresponding author on reasonable request.

Author contributions

Data collection: Robin M. Litten, Omar Zakieh.

Interpretation of the analysis: Robin M. Litten, Omar Zakieh, James F. Bathon.

Drafting of the manuscript: Robin M. Litten, Omar Zakieh, James F. Bathon.

Conceptualization: Robin M. Litten, Omar Zakieh, Byron F. Stephens.

Review and editing of the final manuscript: James F. Bathon, Byron F. Stephens.

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