

A Social Media Analysis of Patient-Perceived Complications Following Periacetabular Osteotomy (PAO)

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ABSTRACT INTRODUCTION:

Social media is a popular resource for patients seeking medical information and sharing experiences. Periacetabular osteotomy (PAO) is an accepted treatment for symptomatic acetabular dysplasia with a low published complication profile in specialty centers. Little is known regarding patient reporting of complications on social media following PAO. The purpose of this study was to describe the patient-perceived complications of PAO posted on social media and analyze how additional factors (postoperative timeframe, concomitant surgery) correlate with these complication-related posts.

METHODS:

Facebook and Instagram were queried from 02/01/18 – 02/01/23; Twitter was searched over an extended range back to 02/01/11. Facebook posts (1054) were collected from the two most populated interest groups; “Periacetabular Osteotomy” and “PAO Australia.” Instagram posts (1003) and Tweets (502) were found using the same five most popular hashtags: #PAOWarrior, #periacetabularosteotomy, #periacetabularosteotomysurgery, #PAOSurgery, and #PAOrecovery. Posts were assessed for demographic data (sex, location), perspective (patient, physician, professional organization, industry), timing (early postoperative complication or late postoperative complication), additional surgeries, type of complication, and post engagement.

RESULTS SECTION:

Of the 2559 posts, 1684 (65.8%) were published postoperatively, with an average timeframe of 321 days after surgery (Median 84 days, IQR 20-275 days). Of the 2559 posts and tweets, 17.7% were from just 15 social media accounts. 348 posts consisted of a reported complication (13.6% of total posts). Perceived complications were subdivided into four categories: (1) unmanageable pain (chronic, acute, nerve), (2) bony complications (non-union, fracture, progression to THA), (3) neurological complications (sleep issues, headache, POTS, mental health changes), and (4) miscellaneous/other complications (swelling, infection, allergic reaction, other specified complications, and non-specified complications). Most patient-reported complications were related to unmanageable pain, accounting for 241 posted complications (57.2%). This includes 28 posts regarding acute pain <1 week postoperatively (6.7% of complications, average of 3.5 days postoperatively), 176 posts regarding chronic pain > 1 week postoperatively (41.8% of complications, average of 211 days postoperatively), and 37 posts regarding nerve pain (8.8% of complications, average of 253 days postoperatively). Bony complications (6.7%), neurologic/psychiatric complications (3.8%), swelling (1.7%), infection (1.4%), other specified complications (16.2%), and unspecified complications (10.2%) were additionally reported. Facebook accounted for nearly half of all posts with a perceived complication (209 posts) and posts on Facebook were more likely than Twitter or Instagram to note a complication (49.6% vs 29.0%, $p < .001485$). Furthermore, posts including a complication (average of 348 days postoperatively) were more likely to occur later in the postoperative timeframe than posts without a complication (average of 246 days postoperatively) ($t(275) = -3.47$, $p < 0.0006$). Facebook and Instagram posts accounted for eighty-five percent of reported pain complications and were equally likely to have a post referencing unmanageable pain (43.6% vs 41.5%, $p = 0.995145$). In addition, posts that reported a concomitant hip surgery (femoral osteotomy, arthroscopy, bilateral PAO, or additional surgery) were less likely to report a complication (12.1% vs 6.5%, $p < 0.032153$).

DISCUSSION:

Patients use social media to learn about their conditions and share their experiences with others on their own terms. Of the 2559 posts included in this study, more than 2000 came from unique conversations related to PAO surgery in just the past two years. Prior studies have shown a low PAO complications profile based on traditional patient-reported outcome measures, however, patients' perceived complications shared on social media may differ. Our study provides a data set of these perceived complications shared by patients and aims to identify other factors associated with complications. The majority of posts related to PAO across Twitter, Facebook, and Instagram did not include a complication. Of posts with a complication, the most common was regarding unmanageable pain, followed by unspecified complications and bony complications. Complication-related posts were found to be correlated with two factors across social media sites: (1) postoperative timeframe and (2) concomitant hip surgery (e.g., femoral osteotomy, bilateral PAOs, arthroscopy). Posts including a complication were more likely to have a later postoperative timeframe, and less likely to originate from a patient who underwent concomitant hip surgery with PAO. Additionally, post engagement decreased when the post included a complication across all three platforms. Many prior studies creating complication profiles of PAO surgery describe a higher complication rate than our study, despite a lack of emphasis on unmanageable pain, though pain is reported at relatively high rates by patients on social media. Considering the social media reported complications of PAO patients in addition to traditional outcome measures reveals which aspects of postoperative recovery are most important to patients themselves. This study has limitations. Given the retrospective nature of the study, we were unable to follow up with any posters on the three social media sites, preventing us from determining the accuracy of the statements made or confirm that they were patients of PAO. Second, not everyone who undergoes PAO is present on social media, and many of those who are may not share their experiences. For those who did post about their PAO, only posts which used our five selected hashtags or were in our selected interest groups were included. This may limit the generalizability of our study results, although these hashtags and groups were chosen because they were the most populated.

SIGNIFICANCE/CLINICAL RELEVANCE:

The utilization of patient reporting on social media by healthcare providers has become increasingly prominent in medicine due to its lowered costs, shortened response times, and overall accessibility compared to traditional patient reported outcome measures. However, no prior study utilizing social media to assess patient perspectives of the periacetabular osteotomy surgery has been performed to date. This study reports on the rate and type of PAO complications posted online by patients themselves, providing insights on what complications truly matter to patients, and where there may be gaps in patient understanding. From this information, physicians can consider both how they manage postoperative complications as well as how they educate patients preoperatively to prepare them for their recovery.