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Is there a need for postoperative monitoring after open carpal tunnel release under WALANT?

Est-il nécessaire d'effectuer une surveillance postopératoire après une libération à ciel ouvert du nerf médian au canal carpien sous WALANT ?

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Abstract

Open carpal tunnel release (OCTR) under wide-awake local anesthesia with no tourniquet (WALANT) is a common outpatient procedure in hand surgery worldwide. In our clinic, WALANT has replaced intravenous regional anesthesia with a tourniquet (IVRA, or 'Bier block') as standard practice in OCTR. We therefore wondered what the optimal postoperative setting after OCTR under WALANT is. In this study, we compared patient satisfaction in two postoperative settings: immediate discharge (ID) after the operation, or short postoperative monitoring (PM) period in the outpatient clinic. Our hypothesis was that older patients would prefer a brief postoperative surveillance. We retrospectively analyzed patient satisfaction with the two settings using an adjusted questionnaire based on the standard Swiss grading system. We also assessed postoperative pain, satisfaction with the perioperative preparations and the reasons for unscheduled postoperative consultations, as secondary outcomes. One hundred and nine patients (ID, n = 63; PM, n = 46) were included in this single-center retrospective observational study. Patients were highly satisfied with both postoperative settings (Mean: ID 5.1/6; PM 5.5/6; $p = 0.07$). Even patients aged ≥ 80 years reported extremely high satisfaction with both settings (ID 5.6/6; PM 6.0/6; $p = 0.08$). Fifteen patients (ID, n = 11 [17.5%]; PM, n = 4 [8.7%], $p = 0.72$) unexpectedly consulted a doctor after surgery. OCTR under WALANT as an outpatient procedure with immediate discharge was associated with high patient satisfaction. However, detailed postoperative monitoring could contribute to the patient's well-being and education on how to cope with the postoperative course, and help with any questions.

Résumé

La libération à ciel ouvert du nerf médian au canal carpien sous anesthésie locale sans garrot ("wide-awake local anesthesia with no tourniquet", WALANT) est une technique ambulatoire courante en chirurgie de la main. Dans notre clinique, la WALANT a remplacé l'anesthésie régionale intraveineuse par un garrot (IVRA/'Bier-block') comme anesthésie standard pour la libération à ciel ouvert du nerf médian. Nous nous sommes donc demandé quel serait le cadre postopératoire optimal après une libération à ciel ouvert du nerf médian au canal carpien sous WALANT. Dans cette étude, nous avons comparé la satisfaction de nos patients dans deux contextes postopératoires différents, soit une sortie immédiate après l'opération (ID), soit une courte période de surveillance postopératoire (PM). Nous avons émis l'hypothèse que les patients plus âgés préféreraient une brève surveillance postopératoire. Nous avons analysé rétrospectivement la satisfaction des patients concernant les deux contextes postopératoires à l'aide d'un questionnaire adapté basé sur le système de notation suisse standard. Nos objectifs secondaires étaient la douleur postopératoire, la satisfaction avec les préparations périopératoires et l'analyse des causes de consultation postopératoire non programmée. Cent-neuf patients (ID, n = 63 ; PM, n = 46) ont été inclus dans cette étude observationnelle monocentrique rétrospective. Les patients étaient satisfaits avec les deux parcours postopératoires (valeur moyenne : ID 5.1/6; PM 5.5/6; p = 0.07). Même parmi les patients âgés de 80 ans et plus, la satisfaction à l'égard des deux paramètres était extrêmement élevée (ID 5,6/6 ; PM 6,0/6 ; p = 0,08). Quinze patients (ID, n = 11 [17,5 %] ; PM, n = 4 [8,7 %], p = 0,72) ont consulté un médecin de manière inattendue après l'opération. La libération à ciel ouvert du nerf médian au canal carpien sous WALANT en tant que technique ambulatoire avec sortie immédiate est associée à une grande satisfaction du patient. Cependant, une surveillance postopératoire détaillée pourrait contribuer au bien-être du patient et à son éducation sur la façon de faire face au déroulement postopératoire et aux questions.

Keywords: WALANT; Open carpal tunnel release; Postoperative monitoring; Unscheduled postoperative consultations; Outpatient surgery

Mots-clés : WALANT ; Libération ouverte du nerf médian au canal carpien ; Surveillance postopératoire ; Consultations postopératoires non programmées ; Chirurgie ambulatoire

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1. Introduction

Open carpal tunnel release (OCTR) is one of the most common outpatient procedures in hand surgery. Nowadays, it is frequently performed under WALANT (wide-awake local anesthesia with no tourniquet). This local anesthesia technique is associated not only with high patient satisfaction but also with low complication rates, less postoperative pain and absence of postoperative nausea and vomiting (PONV) [1,2,3,4,5,6]. Patients are even able to return home unaccompanied after their operation, as there is no impairment of consciousness or activity with WALANT [2,3,4].

Despite all these advantages over procedures under regional anesthesia, in many hospitals patients are monitored briefly in the outpatient clinic after OCTR under WALANT. We therefore wondered whether postoperative monitoring (PM) after OCTR under WALANT is medically necessary or merely desired by patients. We assumed that younger working patients would prefer the shortest possible hospital stay and thus immediate discharge (ID) after the operation. Furthermore, we assumed that older multimorbid patients would favor a brief postoperative monitoring period.

The present study analyzed patient satisfaction with two different postoperative outpatient settings after OCTR under WALANT: immediate discharge from the operating room (ID) vs. short postoperative monitoring in the outpatient clinic (PM). Also, taking account of the results from our previous study [5], we attempted to identify patients that would most likely benefit from postoperative monitoring.

2. Patients and methods

Since 2018 most OCTRs in our two Swiss cantonal hospitals have been performed under WALANT. Usually, we plan these operations as outpatient “walk-in walk-out” procedures. On the day of surgery, the patient comes directly to the operating area, where they change for the operation, and are subsequently discharged directly home from the operating room, without postoperative monitoring if no complications occur. Due to renovation work at one of the hospitals, we had to reconfigure our outpatient surgery at this

site between 2018 and 2019: as access to the outpatient operating rooms was then via the surgical day clinic, patients were also monitored there for a short interval postoperatively before discharge.

2.1. Patient selection

A single-center retrospective observational study included 200 patients over 18 years of age, who underwent elective OCTR under WALANT between 2018 and 2019 in one of our two hospitals. Patients who underwent OCTR with concomitant procedures such as trigger finger release were excluded. Preoperative preparations (explanatory talks, preoperative examinations) and perioperative protocol were the same for all patients and did not differ between the two sites. Patients were informed about potential postoperative complications at home and were all given the same discharge information; handouts with a discharge briefing were not used. Standardized WALANT used a 1% lidocaine-epinephrine mixture. The surgeon performed the injection as described in the literature [3,4]. Intraoperatively, the patients did not receive any further analgesia. In both hospitals, patients received ibuprofen and/or paracetamol as standard postoperative oral analgesia.

The only difference was in postoperative management. In one of the two hospitals, OCTR was performed as a “walk-in walk-out” procedure with immediate discharge from the operating room; in the other, OCTR was followed by short postoperative monitoring of 1-3 hours, with checks on vital signs and bandaging by a nurse, plus a discharge visit by the surgeon.

2.2. Assessment

We sent a customized anonymized questionnaire to the 200 patients. The Swiss school grading system (Table 1) was used for assessment [5,7]. The primary endpoint was patient satisfaction with the postoperative setting. We also analyzed satisfaction with the preoperative setting, which was the same for all patients, postoperative pain, and the number and cause of unscheduled postoperative consultations.

The clinic's review board approved this study. Informed consent was obtained from all patients, following Health Insurance Portability Act regulations.

2.3. Statistical analysis

Statistical analyses used IBM® SPSS® Statistics software, version 24 [5,7]. An unpaired Student t test and the Mann-Whitney-Wilcoxon test were used to detect statistically significant differences between the two postoperative setting groups. Our primary null hypothesis was that there is no difference in satisfaction between ID and PM after OCTR under WALANT. To determine a sufficient sample size, we evaluated routinely performed follow-up inquiries to obtain a sigma concerning the primary endpoint. The significance threshold was set at $p < 0.05$ [5]. Because of the small number of patients older than 80 years, no power analysis was carried out. The secondary null hypothesis of our current study was that patient age did not affect satisfaction with immediate discharge. We matched different subgroups based on age to evaluate whether immediate discharge was equally suited to all ages.

3. Results

Two hundred questionnaires were sent out to patients (ID, $n = 100$; PM $n = 100$). One hundred and nine completed questionnaires (ID, $n = 63$; PM, $n = 46$) could finally be included. Due to the unequal number of subjects in the two groups, a conventional 1:1 match was not possible [5]. However, gender, age and comorbidities were comparable between groups (Table 2); differences were not statistically significant. Mean age was 63.7 years; 17 patients were aged ≥ 80 years. At discharge, most patients were picked up by relatives (ID, $n = 48$; PM, $n = 39$). ID patients were more likely to go home unaccompanied by public transport than after PM patients (ID, $n = 15$; PM, $n = 7$). Only 3 of the patients aged ≥ 80 years went home unaccompanied, all in the PM group.

Both postoperative settings provided high patient satisfaction overall, as reflected in the high mean and median scores (mean: ID, $5.1 \pm 1.3/6$; PM, $5.5 \pm 0.8/6$; $p = 0.07$ / median:

ID, 6/6; PM, 6/6; $p = 0.16$) (Fig. 1). With a non-significant p -value of 0.07, the primary null hypothesis of no difference in satisfaction between ID and PM was not rejected, but the high level of patient satisfaction with both settings is clearly seen in Fig. 2, with a mean satisfaction rating of 5.1 after ID and 5.5 after PM. In both cases, half of the patients rated their satisfaction with the postoperative as very high (ID > 5.1 and PM > 5.5). Beyond that, only a few outliers could be identified. A score of 1 was given by 1 patient in both groups. After ID, only 4 patients gave a score of 2 and 3 a score of 3. Also, in the subgroup of patients aged ≥ 80 years, satisfaction with both postoperative settings was high (Figs. 1 and 2), again without significant difference: $p = 0.07$ (ID, $5.1 \pm 1.3/6$; PM, $5.5 \pm 0.8/6$). The median value for both groups was 6 ($p = 0.16$). Thus, the secondary null hypothesis, that patient age does not affect satisfaction with ID, was also not rejected.

Preoperative preparation was rated as very satisfactory for both hospitals (overall mean value: ID, $5.6 \pm 0.9/6$; PM $5.6 \pm 0.6/6$; patients aged ≥ 80 years: ID $5.6/6$; PM, $5.9/6$ / overall median value: ID, $6/6$; PM $6/6$, $p = 0.66$; median: ID $6/6$; PM, $6/6$, $p = 0.27$).

Postoperative pain was perceived as very tolerable in both postoperative settings (mean: ID, $4.9 \pm 1.6/6$; PM, $5.3 \pm 1.2/6$; $p = 0.16$ / median: ID, $6/6$; PM, $6/6$; $p = 0.30$). Even patients aged ≥ 80 years reported tolerable pain in both cases; here too, there was no significant difference between ID and PM (mean: ID, $5.4 \pm 0.9/6$; PM, $6.0 \pm 0.0/6$; $p = 0.08$ / median: ID, $6/6$; PM, $6/6$; $p = 0.36$).

There was a higher percentage of unscheduled consultations after immediate discharge than after postoperative monitoring: ID, 17.5% [$n = 11$]; PM, 8.7% [$n = 4$] (Fig. 2), but the difference was not significant ($p=0.72$). Nine women and 6 men sought medical attention postoperatively. Only 1 of the patients aged ≥ 80 years contacted a physician after discharge (Fig. 3). Postoperative pain ($n = 5$) and uncertainties about wound healing ($n = 4$) were the most frequently stated causes for unscheduled consultation. Only 1 patient experienced minor bleeding, and 1 presented a superficial wound infection. Four patients did not state the reason for their consultation.

4. Discussion

Due to numerous benefits such as fewer complications, faster recovery times and lower healthcare costs, outpatient surgery has gained tremendous importance in healthcare. Recent advances in surgery and anesthesia have led to more and more elderly patients with numerous concomitant diseases undergoing outpatient procedures [8,9]. In addition, outpatient operations are associated with a high level of patient satisfaction [10,11,12]. Furthermore, some studies have demonstrated that even oncology patients were very satisfied after elective outpatient craniotomy for supratentorial tumor and were even convinced that rapid discharge following outpatient treatment contributed to their recovery and emotional well-being [11,13].

Since OCTR is a safe procedure with a good safety profile and WALANT is a comfortable and flexible anesthesia technique, we are convinced that immediate discharge after the procedure is possible without any problems from a medical point of view. Based on this study, we were also able to demonstrate that immediate discharge from the operating room was associated with high overall patient satisfaction. This was clear from the high satisfaction rating (mean grade 5.1/6) and the fact that half of the patients in the immediate discharge group rated their postoperative setting with a score of 5 or higher (Figs. 1 and 2). The fact that 23.8% (almost a quarter) of the patients who were directly discharged immediately went home or to work independently and alone by public transport shows that this postoperative setting had little or no impact on their daily life.

However, outpatient surgery also places demands on patients, especially to manage their own postoperative recovery at home [14,15,16,17]. Many elderly people are dependent on support in everyday life even without surgery. Thus, what we consider a simple minor operation can already be a major challenge for these patients and severely affect their daily routine. We therefore hypothesized that, after outpatient OCTR under WALANT, elderly patients would prefer to be monitored postoperatively, rather than discharged immediately. However, from our data, it appeared that patients aged 80 years or older did not significantly prefer one of the two postoperative settings: both immediate discharge and postoperative

monitoring were highly rated by these patients (Figs. 1 and 2). It should, nevertheless, be emphasized that, after postoperative monitoring, all patients aged 80 years or older gave the maximum score of 6 points (Fig. 2). Thus, we conclude that immediate discharge after OCTR under WALANT does not overstrain patients, regardless of age, but a short postoperative monitoring period could contribute slightly more to their well-being. This could be due to the fact that patients had a discharge consultation with the surgeon in the outpatient clinic.

Certainly, the great advantage of wide-awake surgery over general anesthesia is that intraoperative interactions and discussions between surgeon and patient are easily possible. The surgeon can use the time during the operation to inform the patient once again of the most important points and recommendations for the postoperative course. How profound and useful these intraoperative discussions are certainly also depends on the stress status of the patient and surgeon. While inexperienced young residents tend to concentrate fully on surgery, experienced senior surgeons can answer the patient's questions much more frequently during the operation. On the other hand, there are certainly also patients who are so distracted during the operation due to tension, anxiety and nervousness that they cannot remember the intraoperative conversation. A short period of postoperative monitoring can give them the opportunity to recover from the excitement of surgery and discuss any questions or complaints that arose perioperatively with their surgeon, in a quiet environment without sterile drapes and surgical lighting. In addition, a quick postoperative check of the wound dressing certainly promotes patient's well-being and leads to fewer unscheduled postoperative consultations.

In our study, despite high patient satisfaction, more unscheduled consultations were observed after immediate discharge than after postoperative monitoring (17.5% vs. 8.7%). Postoperative pain is the most commonly reported complication and reason for unscheduled consultation after OCTR [18]. Although postoperative pain was rated as very tolerable by our patients, it was also the most common cause of unscheduled consultation ($n = 5$), whichever the postoperative setting. Rozanski et al. found that men were at higher risk of developing postoperative complaints after OCTR [18]. Age is also associated with a higher risk of

unexpected readmission within 30 days of outpatient surgery [8]. The risk of peri- and postoperative complications is higher in older patients due to their multimorbidity [8, 15,19]. By contrast, our patients aged ≥ 80 years did not show more postoperative complaints, and only one patient came to our emergency department with postoperative concerns (Fig. 3). We presume that careful preoperative preparation helps reduce the number of unscheduled postoperative consultations, especially after immediate discharge from the operating room. Preparation includes detailed information about the surgical and anesthesiologic procedures, discharge instructions with recommendations for postoperative behavior and pain management, and information about potential postoperative complications that may require readmission. Inadequate information can cause anxiety preoperatively, which is an important predictor of dissatisfaction with the surgical outcome [14,15,20]. Patients also need detailed information preoperatively because it gives them more confidence in their surgeon and an idea of what to expect [13]. In both our clinics, patients were very satisfied with the preoperative preparation, confirmed by the high rates of patient satisfaction (ID, 5.1/6; PM, 5.5/6). In contrast to postoperative monitoring, immediate discharge leaves little or no time to ask questions and discuss complaints with the surgeon. A postoperative handout with a discharge briefing, information on possible postoperative symptoms, explanations on the correct use of pain medication and advice on which complications require the patient to contact their surgeon could be another helpful support. Despite detailed pre- and intraoperative information and handouts, new questions may arise at any time after discharge. For this reason, the use of home telemedicine after outpatient surgery is increasingly recommended. A phone call on the first postoperative day by a nurse or surgeon who participated in the operation is sufficient to deal with new questions and inquire about the patient's well-being [13]. In addition, a postoperative phone call certainly increases patient satisfaction with the whole operation [8,15].

Regardless of age, patients can be discharged immediately after the operation. However, sufficient information should be provided preoperatively. Postoperative assistance

in the form of handouts with the most important information on postoperative recovery should be offered to all patients.

The study also had some limitations. It was a single-center retrospective observational study in two cantonal hospitals, rather than a comparative prospective analysis. Furthermore, the low questionnaire response rate must be considered. Only 54.5% of questionnaires (109 out of 200) were included. The small sample size, and especially the small subgroup of patients ≥ 80 years old, could also have had an influence on the power of the outcome measures. Furthermore, we were unable to track compliance with prescribed and recommended postoperative analgesia; thus, it was not known whether isolated persons who reported very severe pain postoperatively continued to experience severe pain despite the recommended medication, or did not adhere to the prescription. In general, perceptions of pain and satisfaction are subjective, and the present data were mostly of a subjective nature [5]. It is possible that only satisfied patients answered the questionnaires, or that they confused satisfaction with the result of the operation and satisfaction with the type of anesthesia. We tried to reduce this uncertainty by asking very specific simple questions and applying the standard Swiss grading system (1 = insufficient/very strong pain to 6 = excellent/no pain) [5].

5. Conclusion

OCTR under WALANT as an outpatient intervention with direct discharge from the operating room is possible from a medical point of view and is also associated with high patient satisfaction. Postoperative monitoring after OCTR under WALANT is neither necessary nor required by most of our patients. However, postoperative monitoring could contribute to the patient's well-being and reduce their anxiety in selected cases. Detailed preoperative education on the procedure itself and possible postoperative complaints as well as sufficient postoperative care with helpful handouts or postoperative phone calls by the surgeon are no less important for outpatient "walk-in walk-out" management than careful patient selection. This should help to reduce the higher rate of unscheduled postoperative consultations observed after immediate discharge.

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Patients' informed consent:

Informed consent was obtained from all patients, following the Health Insurance Portability Act regulations. The institutional general consent form, that all patients included in the study received and signed, is attached to this document.

Ethics:

The institutional review board approved this study. Informed consent was obtained from all patients, following the Health Insurance Portability Act regulations.

References:

1. Becker SJE, Makanji HS, Ring D. Expected and actual improvement of symptoms with carpal tunnel release. *J Hand Surg Am* 2012;37:1324–9. e1-5.
2. Coddling JL, Bhat SB, Ilyas AM. An economic analysis of MAC versus WALANT: A trigger finger release surgery case study. *Hand (N Y)* 2017;12:348–51.
3. Kaiser P, Keller M, Dörler J, Schmidle G. (2018): Wide-awake-Technik in der Handchirurgie an Hand von Anwendungsbeispielen. *Oper Orthop Traumatol* 2018;30:195–209.
4. Lalonde DH, Tang JB. How the wide awake tourniquet-free approach is changing hand surgery in most countries of the world. *Hand Clin* 2019;35:xiii–xiv.
5. Lech L, Leitsch S, Krug C, Bonaccio M, Haas E, Holzbach T. Open carpal tunnel release under WALANT – Suitable for all ages? *J Hand Surg Glob Online* 2021;3:129-32.
6. Via GG, Esterle AR, Awan HM, Jain SA, Goyal KS. Comparison of local-only anesthesia versus sedation in patients undergoing staged bilateral carpal tunnel release: A randomized trial. *Hand (N Y)* 2020;15:785-92.
7. Bodenmann PS. The educational system of Switzerland. *Education around the World*. Office of Education (DHFV), Washington, D.C. 1980;36. Available at: <https://eric.ed.gov/?id=ED189019>
8. Cao X, White PF, Ma H. Perioperative care of elderly surgical outpatients. *Drugs Aging* 2017;34:673–89.
9. De Oliveira GS Jr, Holl JL, Lindquist LA, Hackett NJ, Kim JYS, McCarthy RJ. Older adults and unanticipated hospital admission within 30 days of ambulatory surgery: An analysis of 53,667 ambulatory surgical procedures. *J Am Geriatr Soc* 2015;63:1679–85.
10. Kalogera E, Bakkum-Gamez JN, Jankowski CJ, Trabuco Emanuel, Lovely JK, Dhanorker S, et al. Enhanced recovery in gynecologic surgery. *Obstet Gynecol* 2013;122 (2 Pt 1), S. 319–328.

11. Venkatraghavan L, Bharadwaj S, Au K, Bernstein M, Manninen P. Congé le jour même après craniotomie pour chirurgie sur tumeur sus-tentorielle: étude observationnelle rétrospective d'un centre hospitalier. *Can J Anaesth* 2016;63:1245–57.
12. Weissman C, Klein N. Who receives postoperative intensive and intermediate care? *J Clin Anesth* 2008;20:263–70.
13. Khu KJ, Doglietto F, Radovanovic I, Taleb F, Mendelsohn D, Zadeh G, et al. Patients' perceptions of awake and outpatient craniotomy for brain tumor: a qualitative study. *J Neurosurg* 2010;112:1056–60.
14. Berg K, Arestedt K, Kjellgren K. Postoperative recovery from the perspective of day surgery patients: a phenomenographic study. *Int J Nurs Stud* 2013;50:1630–8.
15. Dahlberg K, Jaensson M, Nilsson U, Eriksson M, Odencrants S. Holding it together-patients' perspectives on postoperative recovery when using an e-assessed follow-up: Qualitative study. *JMIR Mhealth Uhealth* 2018;6:e10387
16. Jaensson M, Dahlberg K, Nilsson U. Factors influencing day surgery patients' quality of postoperative recovery and satisfaction with recovery: a narrative review. *Perioper Med (Lond)* 2019;8:3.
17. Odom-Forren J, Reed DB, Rush C. Postoperative distress of orthopedic ambulatory surgery patients. *AORN J* 2017;105:464–77.
18. Rozanski M, Neuhaus V, Thornton E, Becker SJE, Rathmell JP, Ring D. Symptoms during or shortly after isolated carpal tunnel release and problems within 24 hours after surgery. *J Hand Microsurg* 2015;7:30–5.
19. Thomsen NOB, Cederlund R, Björk J, Dahlin LB. Health-related quality of life in diabetic patients with carpal tunnel syndrome. *Diabet Med* 2010;27:466–72.
20. Ali A, Lindstrand A, Sunberg M, Flivik G. Perioperative anxiety and depression correlated with dissatisfaction after total knee arthroplasty: a postoperative longitudinal cohort study of 186 patients, with 4-years follow-up. *J Arthroplasty* 2017;32:767–70.

Figure legends

Fig. 1. Patient satisfaction with the postoperative setting (mean grade) according to age.

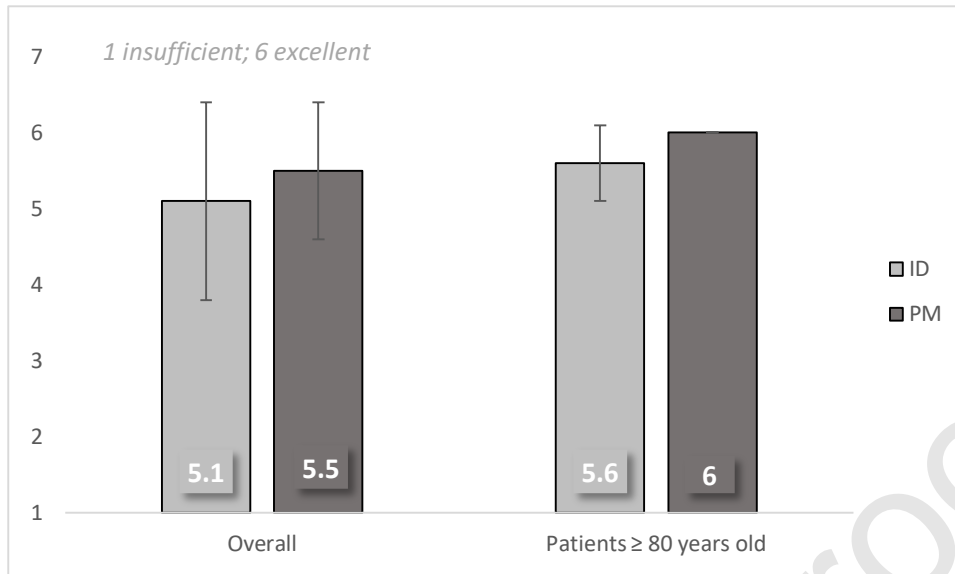
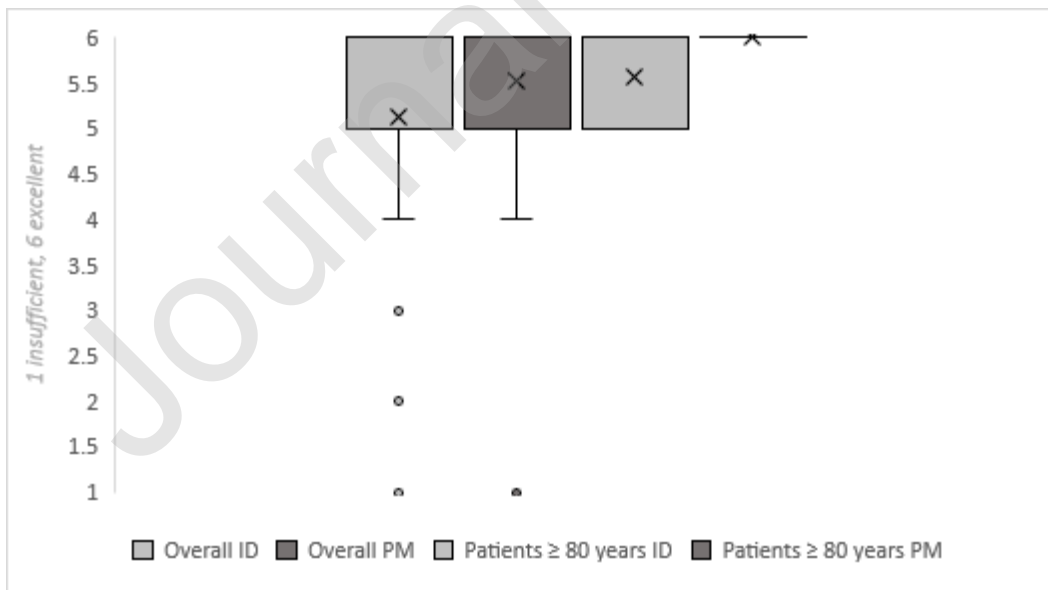
Fig. 2. Patient satisfaction with the postoperative setting according to postoperative management.

Fig. 3. Unscheduled postoperative consultations.

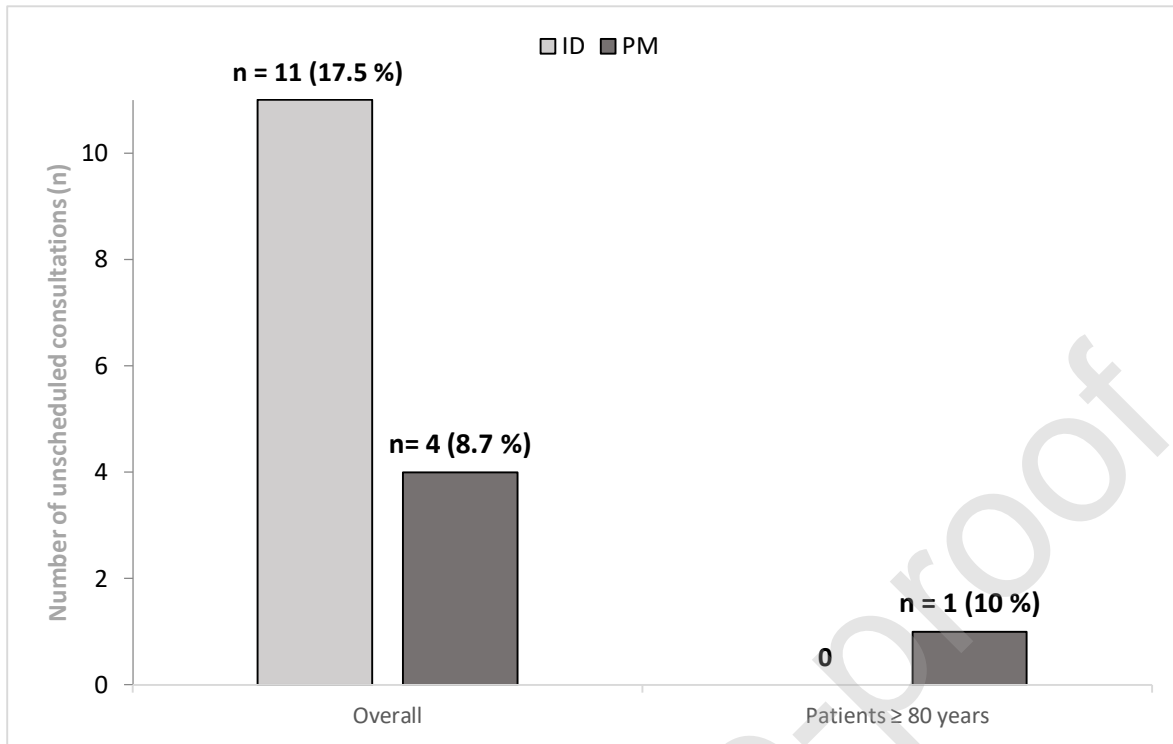
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Fig. 1. Patient satisfaction with the postoperative setting (mean grade) according to age.

1.

**Fig. 2.** Patient satisfaction with the postoperative setting according to postoperative management.

ID: immediate discharge; PM: postoperative monitoring

Fig. 3. Unscheduled postoperative consultations.

ID: immediate discharge; *PM*: postoperative monitoring

Table titles

Table 1. Swiss school grading system used in our questionnaire [5]

Table 2. Patients' demographics

Table 1. Swiss school grading system used in our questionnaire [5]

1	Insufficient; is not true at all; very strong pain
2	Deficient; does not really apply; strong pain
3	Sufficient; is partly true; moderate pain
4	Satisfying; is more true; tolerable pain
5	Good; is true; less pain
6	Excellent; is fully true; no pain

Table 2. Patients' demographics

Demographics	Immediate discharge	Postoperative monitoring	p-value
Overall patients (n)	63	46	0.73
Women, n (%)	42 (66.7%)	24 (52.2%)	0.67
Men, n (%)	21 (33.3%)	22 (47.8%)	0.99
Mean age \pm SD (Min; Max)	63.41 \pm 13.98 (23; 91)	64.12 \pm 16.78 (20; 94)	0.99
Patients \leq 40 years	4	5	0.22
Patients 65 to <80 years	22	11	0.62
Patients \geq 80 years	7	10	0.23