



Non-Budgeted Research Application (DSR.002)

- Please complete all required sections.

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Second / Research Team:

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Third / Research information:

Proposal title / English	Burden of routine orthopedic implant removal at Fahd Hospital of the University
Proposal title / Arabic	عبء إجراء العمليات الروتينية لأدوات التثبيت الداخلي للعظام بمستشفى الملك فهد الجامعي
General field	Orthopedic
Specific field	Orthopedic
Project duration	1 year
Type of the research	<input type="checkbox"/> Experimental <input type="checkbox"/> Review article <input checked="" type="checkbox"/> Based on questionnaire

A\ Project Summary / Arabic (Max 200 words) Briefly describe the background, aims, methodology and the importance of the research.

على ضوء عدم وجود اتفاق علمي شامل حول أفضل الممارسات الطبية بإجراء عمليات إزالة الشرائح، أو القضبان المعدنية، أو المسامير في حالات كسور العظام التي تم تثبيتها داخلياً وتكلفة العمليات المادية ومضاعفاتها ورغبة في الوصول لأفضل الممارسات والمحافظة على الموارد؛ نود القيام ببحث يدرس عبء عمليات إزالة أدوات التثبيت الداخلي للعظام على صحة المرضى وموارد النظام الصحي في مستشفى الملك فهد الجامعي في الخبر. الأثر المتوقع من الدراسة هو دعم أو معارضة القيام بعمليات إزالة أدوات التثبيت الداخلي للعظام كإجراء روتيني لتوجيه قرارات العلاج المناسبة.

B\ Research Summary / English

The lack of scientific consensus on the benefits and risks for routine bone implant removal (e.g., intramedullary nails, plates, and screws) has raised a question on whether this is the best use of resources or not. Thus, in the quest to reach the best medical practice and resources preservation we plan on conducting research to study the burden of routine implant removal among King Fahd Hospital of the University's patients to determine its effects on patients' health and hospital resources. Therefore, we believe this study is significant as it can support or oppose the routine removal of orthopedic implants to guide appropriate treatment decisions.

C\ Literature Survey

Questioning the validity of routine implant removal was apparent in the literature for a long period of time considering the limited resources available for the health system. For instance, a large retrospective study in Finland found that routine implant removal accounts for 29% of all elective operations, which warranted further research to determine the usefulness of routine implant removal (1). In addition, multiple studies have discussed the time missed from work or school after implant removal to be 11-16 days, whereas the hospital stay was reported as 2.6 days (2-4). Moreover, the mean duration in the operation room was reported to be 37 minutes in implant removal surgeries (5)

Asymptomatic implant removal was associated with risks including, persistent pain after surgery, soft tissue infections, and longer hospital stay (6). Moreover, perioperative complications (e.g., arterial injury, blistering, nerve injuries, skin necrosis, and infection) were noted in the patients enrolled in one study (7). Additionally, routine implant removal in pediatric is debatable and there is a need for clear indications especially with the advancement of being used in pediatric orthopedic surgery (8).

D\ Objectives

Measuring the burden of routine orthopedic implant removal at King Fahd Hospital of the University on patients (complications, absenteeism) and on the health system resources.

E\ Expected Results

Acquiring information on the validity of routine implant removal which can determine the clinical practice either by supporting or opposing the decision.

F\ Materials and Methods

We plan on conducting a retrospective cohort study in King Fahd Hospital of the University – orthopedic surgery department. We will include all implant removal operations from 1.1.2012 to 1.1.2022 that was performed in the hospital. Estimation of sample size is around 300 patients including adults and pediatric population. The data collection will be conducted via the hospital system and will include demographic data, operation date and time, duration, indications, complications, hospital stay, and if any sick leave provided. In addition, the limitations of this study include that it's retrospective, held in one center, and relatively small sample size. However, the significance of this study arise from the lack of clear consensus in the literature and the need for a uniform approach to such cases, which will improve patient care and physician/patient communication.

G\ References

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7. . Kasai T, Matsumoto T, Iga T, Tanaka S. Complications of implant removal in ankle fractures. Journal of Orthopaedics. 2019;16(3):191-194.
8. Schmittenbecher P. Implant removal in children. European Journal of Trauma and Emergency Surgery. 2013;39(4):345-352.

Filled by the Head of the Department

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Principal Investigator	Name: Dr. Ammar Al-Omran	Date: 16.Oct.2022	Signature:
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