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ABSTRACT BOOK
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Nursing process in the care of patients with musculo-skeletal bone or soft tissue tumors
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The aim of this paper is to provide a description of nursing care in Orthopedic Oncology Department of the Careggi University Hospital, a national reference centre.
The nurses team has been working in the same ward for many years and this is the basis of its great expertise and knowledge.
Nurses are central to every stage of care and their goal is to provide a safe and competent care to patients who often suffer from other diseases which complicate management.
Nurses work in collaboration with a multidisciplinary team which includes physiotherapist, surgeon, radiologist, pathologist, radiation and medical oncologist to improve the quality of every day assistance and clinical practice.
2336

How to guide the postoperative function recovery in patients with lower limb salvage surgery for bone tumour: an observational study

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Background: In literature no rehabilitation protocols or specific care pathways are defined for patients with lower limb salvage surgery that attempt to achieve and improve postoperative function recovery. The objective of this study is to describe the assessment of patients undergoing lower limb reconstruction surgery, build reference values of the functional results achieved.

Methods: Prospective observational study. All patients undergoing resection and knee reconstruction surgery using a modular prosthesis following bone tumor resection were consecutively recruited for two years. The patients were followed for the period of one year, the result values were collected at 3, 6 and 12 months. An evaluation grid was created, based on the available literature and clinical experience. The aim of the grid was to obtain a summary of the patient’s main motor skills and it outlined 5 main result measures: joint mobility of the knee (ROM), the maximal strength of the quadriceps, the level of autonomy recovered according to the Toronto Extremity Salvage Score (TESS), the motor performance, measured by Time Up and Go (TUG) and the walking resistance, measured by the six minutes walking test (6mWT).

Results: In total, 30 patients were eligible for the study, and all were consecutively enrolled. At the 3rd, 6th and 12th month of follow up it was possible to evaluate 26, 21 and 22 patients, respectively. A median knee flexion of 110 (41.3), a quadriceps strength of 4.0 (1.6), a TESS score of 85% (13.3), a TUG of 7.1 (1.8) (sec) and 6mWT of 450 (47.5) (m) outcomes were in line with the values found in the literature. Median values recorded for knee flexion, quadriceps strength, TESS score, TUG and 6mWT show an improvement of 16%, 25%, 18%, 48% and 38% between 3 and 12 months, respectively. Data gathered at each follow up, were reassumed in a radar type chart, providing reference values and a clinical practice tool.

Conclusion: Patients undergoing knee reconstruction for bone tumors were able to achieve satisfactory functional outcomes starting from the first postoperative year. It is important to underline the role of iterative evaluation at 3-6-12 months to correctly evaluate the progress of the patient’s recovery by highlighting which skills are most deficient and which later on make functional recovery. In the field of oncology one of the tasks of rehabilitation is to guide the recovery of the patient and to address their expectations correctly. A specific assessment of outcomes can be performed to facilitate the management of patient expectations and to help clinicians analyze the results achieved.
Physiotherapists clinical practice in face of the individual newly amputated patient
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Patients are hospitalized for amputation surgery throughout the country, and physiotherapists are involved in the treatment of this patient group. However, we do not know enough about what the physiotherapist’s work consists of, and what affects the choices and assessments the physiotherapists make in face of the individual newly amputated patient. The aim of this study is thus to document common features and differences in the physiotherapy treatment of newly amputated patients in Norway. The study is based on semi structured interviews of 10 experienced physiotherapists, who work at eight different hospitals, in different regions of the country. The empirical material is analysed and discussed based on an understanding of the clinical implications of an amputation. The interviews have been analysed with reference to the health services organization and current requirement for multidisciplinary cooperation. Methodologically, the study is inspired by a phenomenological and hermeneutic understanding. Through the empirical material, two main themes were identified: “Context” and “Treatment”. Newly amputated patients constitute a complex patient group in which the patient’s general condition, the cause of amputation and amputation level largely affect the extent of physiotherapy treatment in the postoperative in-hospital stay. The length of the hospital stay varies for this patient group, and effects the physiotherapists’ choice of treatment. The empirical material implies a discrepancy between the role the physiotherapists themselves think they ought to have in the interdisciplinary cooperation and the role they actually play in the hierarchy at the hospital. Physiotherapy treatment mainly consists of mobilization, prevention of contractures, reducing oedema in the residual limb, pain relief and information and guidance of the patients. The informants express that they are only doing some advanced physical therapy. However, the study reveals that physiotherapists often do more than they are aware of and that they often implement several factors in their primary intervention, without necessarily consciously doing so.

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A self-managed and individualized physiotherapy exercises database: an important tool to ensure the rehabilitation continuity after hospitalization

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Background: With the improvement of diagnostic techniques, chemotherapy treatments and reconstructive techniques, most of patients with bone tumor can be treated with salvage surgery, the 5-year survival rate has improved from 20% to 85%. Post-surgery chemotherapy involved a series of hospitalizations with administration of continuous infusions over 2-6 days, every 3 weeks for a total duration of 6 months. During the hospitalization a physiotherapy treatment it’s usually activated. Treatment is aimed at minimizing the disabling effects of surgery and achieving the best possible recovery of patients’ residual abilities. However, in clinical practice a lack of a therapeutic continuity between hospitalization rehab treatment and home based physical therapy is common. Studies suggest that patients participating in active self-management activities with self-developed action plans experience significantly reduced pain symptoms and improved functional ability. The aim of the present study was to define an individualized and self-management exercises program for patients underwent lower limb salvage surgery to facilitate the continuity of rehabilitation treatment. Furthermore, the feasibility and the patients’ satisfaction were evaluated.

Methods: A pilot-study was conducted. A database with specific exercises was set on the base of the surgical intervention location and features. All the exercises were elaborated by a multidisciplinary health team (physiotherapist, orthopedic and oncologist) and based on available scientific literature data. Different exercises subgroups were defined according to the execution postures and the difficulty progression (supine, sitting, core stability, warm-up, stretching, standing without weight bearing, standing with partial/total weight bearing). For every exercise a picture and written instructions were provided. Exercises were performed by patients during hospitalization under physical therapist supervision. At the discharge a self-patient exercise card was given to each patient.

Results: From July 2018 until now, 46 self-managed exercises cards have been elaborated and given to 27 patients. According to the indications provided by the patients at their following hospitalization, the descriptions of some exercises have been corrected to make them more comprehensible and repeatable at home. No critical issues were referred.

Conclusions: For patients underwent a lower limb salvage surgery after bone tumors it’s important to have self-managed and individualized tools to help physiotherapy exercises and to guide practice of exercises at home, ensuring a rehabilitation continuity after hospital discharge.
A maximal physical activity program in children with malignant bone tumours

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Purpose: International public health and health promotion organizations have identified the health risks across the lifespan associated with physical inactivity. Physical inactivity is one of the leading causes of the major chronic diseases, and largely contributes to the burden of disease, death, and disability in developed countries. Childhood cancer and its treatment have considerable impact on a child’s physical and mental wellbeing and leads often to reduced physical activity levels and sedentary behaviour. Especially the combination of long-term chemotherapy, surgery and/or radiotherapy as administered in children with bone cancer impairs physical fitness both during and after therapy. Survivors of childhood bone cancer experience serious late effects, functional and sportive limitations and report a significant lower Quality of Life (QoL) in relation to healthy peers and other childhood cancer survivors. Physical activities are important for the development of children and increasing evidence suggests beneficial effects of physical activity promotion during cancer treatment as well. Therefore, ways to promote physical activity and exercise are becoming an important part of children's cancer treatment. However, due to the vulnerability of the affected or just-operated extremity, patients with bone cancer are often excluded from physical training programs.

Method: By means of the “MAXIMAL physical activity” project of the Princess Maxima Centre for paediatric oncology, we want to encourage our young patients to get out of bed and be as active as possible both during and after treatment. For children with bone cancer it is also important that they are actively challenged in their physical development at a level that is appropriate to them. In order to allow children with bone cancer to participate safely in this program, we have had to adjust the program somewhat and added specific activities.

Conclusion: The ultimate goal of this project is that children with bone cancer will be maximal physical active during active neoadjuvant and adjuvant treatment with the final goal to achieve optimally function in daily life after cancer treatment and promote sports participation.
3008

New technologies: robotic surgery and navigation
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The development of technologies and their application in elective orthopedic and oncological surgery improves surgeon's performances bringing innovation in the procedures of operating room nurses. We share our up-to-date knowledge and experience in operating room through a description of the procedures, equipment and set up: robot or navigation devices placement, patient positioning, basic and specific materials preparation, robotic or navigation components registration test.

The navigation software helps surgeon in complex bone resections; robotic system is intended to assist the surgeon in providing software definite spatial boundaries for orientation and reference information to anatomical structures during total hip, total knee and partial knee replacement procedures.
3004

Case report: Challenge in pelvic - spine reconstruction after malignant tumor resection

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Numerous patients with malignant bone tumors are treated surgically. In most cases the resection can be reconstituted with a prosthesis or an allograft. In some cases the reconstruction is a challenge because of the location of the tumor.

This case report presents the challenge of surgery in the pelvic and lumbar spine area. The results of the challenging surgical reconstructions are illustrated with images of x-rays and MRI imaging views.

Complementary to the presentation of this case report two dedicated care professionals, an oncology nurse and a physiotherapist will present their specific role in the nursing care and the rehabilitation of this patient.
Custom made prostheses are the most recent innovation in orthopedic surgery. The implants are produced for a specific patient through an accurate pre-operative study based on CT and MRI. 3D printing is a manufacturing process in which materials such as plastic or metal are deposited in layers to create a 3D objects from a digital model. This process is called additive manufacturing and has the advantage to make objects with complex shape and geometry, so the implants are tailor-made on the patient.

This technology is used in oncological surgery to repair gap of bone loss after resection. The dedicated instrument allow to save time in the OR, but on the other hand there is a low flexibility of the resection if the tumor mass has increased, so is important to the scrubbed nurse to be ready to change the planned surgery.
3005

Intraoperative nurse management during reconstruction with flap in oncological surgery
Silvia Ceccherini, Paola Di Giantomasso, Daniela Vannini, Pasquale Clementi, Claudia Bigazzi

We aim to provide our experience during a reconstruction with flap after a surgical bone resection. In our department one of the most popular reconstructive options is vascularized fibular graft. This surgical procedure is performed by the orthopedic and microsurgeons teams simultaneously in order to minimize the time of surgery. The nurse management is focused on operating room set up and to maintain the integrity of surgical field during this long-time surgical procedure. Moreover, following several teams is particular challenging for both the scrubbed and circulating nurses due to the turnover of the surgeons.
3006
Postoperative nurse management after reconstruction with flaps in oncological surgery
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The aim of this paper is to provide a description of postoperative nurse management after reconstruction with flaps. Flaps are complex procedures requiring experience and careful monitoring. Postoperative monitoring is an essential component of care in patients undergoing microsurgical reconstructive surgery. Early recognition of vascular problems improve the chance for flap salvage. Nurses provide the majority of clinical bedside monitoring on postoperative flap management. Complication cannot be completely prevented, however the incidence may be significantly reduced by a thorough preoperative evaluation and application of prophylactic strategies, meticulous surgical technique and diligent postoperative monitoring.
The assessment of fatigue and quality of life in patients with bone tumor, undergoing chemotherapy treatment and possible predictive factors. A prospective observational study

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Introduction and Purposes: Fatigue in patients with cancer is one of the main symptoms during the period of chemotherapy and this problem is also relevant after the treatment conclusion. There are few studies describing the fatigue, its onset and its course in the population of patients with bone cancer. The aim of this study is to evaluate and describe the fatigue and quality of life of patients with bone tumor during chemotherapy and to identify possible prognostic factors.

Materials and Methods: DESIGN: prospective observational study. POPULATION: all patients recruited consecutively, belonging to the chemotherapy SSD for a new antiblastic treatment protocol. Primary outcome: Patients’ Fatigue will be measured throughout the treatment period with antiblastic drugs. The Brief Fatigue Inventory scale (BFI) will be used. The measurement will take place over 4 times: the day of enrollment, 6 months, 12 months and 24 months after enrollment. Secondary outcome: patients’ quality of life will be measured using the EORTC QLQ C-30. The variables necessary for the study were decided by a multidisciplinary working group.

Results: In a pilot study of 19 patients at the chemotherapy SSD the mean BFI score was equal to 31.6 with DS 19.1. Based on this data, the number of variables taken into consideration and considering an effect size of 0.1, the number of patients to be enrolled is 200.

Conclusion: Is important the patients reported outcome. For this study I propose a collaboration with other centers. It is important to collaborate and achieve strong results. Together, the assistance of cancer personnel must be improved.

References
Implementation of shared decision making in malignant bone cancer surgery
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Purpose: Guidelines in paediatric oncology care encourage health-care providers to share relevant information with patients/parents to enable their active participation in decision making. In malignant bone tumour surgery where the decision concerns a surgical intervention with a wide range of consequences, involvement of the patient and parents in the final decision is of great importance. 72% of patients with bone cancer and 88% of their parents reported in a previous survey to prefer independent or shared decision making concerning the surgical intervention. Furthermore; a bigger involvement in decision making resulted into a significant lower percentage decisional conflict and regrets. To enable participation of patients and parents in the surgical decision it is important to inform them extensively about the surgical options and all the pro’s and con’s of these options.

Method: To implement Shared Decision Making (SDM) in malignant bone cancer surgery a digital decision aid has been produced containing information, visual material and animations about the surgical options and SDM. Implementation of SDM has been started in the daily practice of the Princess Máxima Center for Pediatric Oncology.

Results: With the introduction of SDM in daily practice, the impact of the implementation of SDM and the decision aid will be evaluated during the next years.

Conclusion: A digital decision aid has been produced containing information, visual material and animations about the surgical options and SDM has been implemented in the daily practice. With the introduction of SDM also the evaluation started.
3003
Effectiveness of the care pathway for oncology orthopedic patient. Interrupted time series study
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Background: In the surgical oncology ward in Bologna Italy, musculoskeletal oncology patients often came from quite far away. Both school-age and adult patients are treated. One of the main problem is the waiting times between the admission in the ward and the surgical intervention. The purpose of implementing a structured path is to codify patients based on the complexity of care before entering the hospital. The ultimate goal is to be able to have the patient ready for surgery within 24/48 hours of entry. Recognizing the patient and coding it before the intervention allows for the provision of safe and personalized assistance. It is a nursing project that bases its construction on the principle of patient centrality, advocacy and resource optimization.

Aim and Design: The objective of the study is to verify whether the implementation of a dedicated path reduces the waiting surgical time. The logic of the chosen design (Interrupted Time Series) is to carry out a series of measurements repeated over time in the period concerned or between the pre and post intervention / change, as it is possible that the real effects of the intervention change are influenced by external factors.

Results: A nurse case manager started working in the ward in January 2018. Pre-intervention data was collected on all patients admitted in the first 6 months of 2017 and compared with patients with the same characteristics admitted during the first 6 months of 2018. 336 patients were enrolled. The data collected confirm the hypothesis, in a homogeneous and comparable series of cases in the two observation periods, there is a clear improvement in the parameters under study, such as the average pre-operative stay, which goes from 2.03 days to 1.73 and the number of hospitalized patients who have not been operated, passing from 8.9% to 2.9%.

Conclusion: The implementation of a dedicated path significantly reduces the waiting time from admission to the hospital under ordinary hospitalization to entry into the operating theater.