

## 21

# Hip Disarticulation

Paul Sugarbaker and Martin Malawar

## OVERVIEW

Hip disarticulation is an amputation through the hip joint capsule, removing the entire lower extremity, with closure of the remaining musculature over the exposed acetabulum. Hip joint disarticulation was the classic procedure for the treatment of distal femoral osteosarcomas. The oncological thinking during the 1970s was that the existence of skip metastases throughout the introsseous extent of the femur was extremely significant and a cause of local recurrence and metastatic disease. Therefore, the philosophy of the day (1940s–1970s) was to remove the entire bone when involved by an osteosarcoma, tumors of the distal and proximal femur were treated by total femur resection/removal; that is, a hip disarticulation. Similarly, an osteosarcoma of the proximal humerus was treated with a forequarter amputation to remove the entire humerus.

Fortunately, today, hip disarticulations are rarely performed for tumors of the distal femur. Ninety to 95% of distal femoral sarcomas can be treated with limb-sparing procedures. Those that cannot are treated with a mid-thigh to a high above-knee amputation. Soft-tissue sarcomas, which involve the distal or mid-portion of the thigh, can often be treated by a limb-sparing resection. A hip disarticulation for a soft-tissue sarcoma is rarely performed, although, similar to bone sarcomas, it was the standard operation for mid-thigh, high-grade soft-tissue sarcomas during the 1940s and 1970s.

It must be noted that tumors that involved the proximal femur are best treated by a modified hemipelvectomy. A hip disarticulation would leave extremely close or positive margins along the remaining hip capsule and/or the musculature around the hip joint that attaches to the ilium anteriorly and posteriorly.

Today, most diaphyseal femoral tumors are treated with an intercalary resection or total femoral replacement. An intercalary resection can be reconstructed with a composite, consisting of an allograft spanned with an intramedullary rod, or an allograft spanned by an autogenous fibula from the same side. MRI is extremely useful in determining the introsseous extent of diaphyseal tumors.

Today hip disarticulation is considered a poor oncological operative procedure. Its main use is for failed vascular procedures following multiple lower-level amputations, or for massive trauma with crush injuries to the lower extremity.

The surgical technique is based upon a wide fish-mouth incision placed over the central aspect of the femoral triangle. This incision passes medial and lateral at the level of the greater trochanter and then transverves around the posterior thigh. The femoral vessels are initially exposed, ligated, and doubly transected. The medial and lateral thigh musculature is transected above the level of the greater trochanter. The adductor attachments of the muscles are removed from their origin along the ischium and pubic rami.

The hip is then flexed and the posterior incision is made. The posterior musculature is released from the ischium. The sciatic nerve is cut high above the profundus to allow it to retract. The inferior and superior gluteal vessels are ligated prior to removal of the extremity. We routinely utilize epidural narcotic catheters placed into the sciatic and femoral nerves at the time of surgery for postoperative pain control. It has been our experience that this dramatically reduces the amount of postoperative narcotics by 95%. This is especially true in younger patients who have extreme pain following amputations at any level. This catheter is continued for a minimum of 3–5 days postoperatively and, if necessary, the patient can go home with the catheter in place with a portable infusion pump (these pumps are made by several manufacturers).

Function following a hip disarticulation with a modern prosthesis is acceptable. Patients are ambulatory at approximately 6 months with the use of one cane. Intensive physical therapy and psychological rehabilitation is required prior to and following surgery, for optimal results. We routinely transfer patients to a rehabilitation hospital immediately after surgery for a 2-week period of intensive therapy. Patients are instructed in the use of crutches and a walker, and are taught how to wrap their stump. This, in conjunction with a support group for amputees and sarcoma patients, has been found to be beneficial. Early and intensive psychological and physical rehabilitation results in most patients being completely independent and ambulatory at the end of 1 year. Surprisingly, all patients who require amputation at the hip-joint level for vascular disease can also become functional with crutches and/or a wheelchair. Amputations performed for vascular disease are often on a semi-emergency basis. The typical patient is in sepsis from multiple failed above-knee procedures or clotted femoral-popliteal grafts.

# 21 Hip Disarticulation Sarcoma

**Western Surgical Association**



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*Musculoskeletal Cancer Surgery* Martin M. Malawer, Paul H. Sugarbaker, 2006-02-24 Steven A Rosenberg MD In the past two decades significant progress has quality of life The use of local radiation therapy has occurred in the management of patients with mus had a profound impact on the ability to achieve local loskeletal cancers that has improved both the survival control Cooperation between surgeons and radiation and the quality of life of afflicted patients Changes in therapists often results in the tailoring of surgical p the management of these patients have mirrored cedures to maximize the combined application of these trends in the entire field of oncology two effective treatment modalities Although impact on The most significant change has been improvement overall survival has not been demonstrated due to the in the surgical techniques for the resection of musculo addition of radiation therapy important advances in skeletal cancers based on a detailed understanding of improving the quality of life of patients receiving this the anatomic features of each particular tumor site as combined modality treatment have been evident well as an appreciation of the natural biology that affects A third change impacting on the survival of patients the local spread of these tumors The current volume of with musculoskeletal cancers has been the aggressive Musculoskeletal Cancer Surgery Treatment of Sarcomas and resection of metastatic deposits

Diagnosis and Management of Soft Tissue Sarcoma Murray Brennan, Jonathan Lewis, 2002-01-18 Soft tissue sarcoma is an uncommon disease with a historically ominous prognosis but there has been a great deal of progress in the last two decades in the understanding of these diseases and accurate prognostic and therapeutic information is now available that removes much of the mystique *Pediatric Bone Sarcomas* José Cañadell, Mikel San-Julian, 2009-04-21 This book addresses malignant bone tumours by focusing upon physeal distraction epiphysiolysis before excision This technique has long been used by the authors of this book in preserving the joint in metaphyseal bone tumours in children Operative Techniques in Orthopaedic Surgical Oncology Malawer, Jacob Bickels, James C. Wittig, 2012 Operative Techniques in Orthopaedic Surgical Oncology provides full color step by step explanations of all operative procedures in orthopaedic oncology This text contains the chapters from the oncology section in Sam W Wiesel s Operative Techniques in Orthopaedic Surgery Written by experts from leading institutions around the world this superbly illustrated volume focuses on mastery of operative techniques and also provides a thorough understanding of how to select the best procedure how to avoid complications and what outcomes to expect Accompanying the book is a companion website with the fully searchable text and procedural videos The user friendly format is ideal for quick preoperative review of the steps of a procedure Each procedure is broken down step by step with full color intraoperative photographs and drawings that demonstrate how to perform each technique Extensive use of bulleted points and tables allows quick and easy reference Each clinical problem is discussed in the same format definition anatomy physical exams pathogenesis natural history physical findings imaging and diagnostic studies differential diagnosis non operative management surgical management pearls and pitfalls postoperative care outcomes and complications

*Sarcoma Oncology* Raphael E. Pollock, MD, PhD, FACS, R. Lor Randall, MD, FACS, Brian O'Sullivan, MD, FRCPC, 2019-05-15 *Sarcoma Oncology A Multidisciplinary Approach* is a comprehensive textbook that addresses the entire spectrum of the subject from epidemiology to laboratory research in the biology of sarcomas Chapters contributed by an international group of highly regarded specialists cover the epidemiology and pathology of sarcomas diagnostic imaging and biopsy techniques staging and prognosis surgery of sarcomas in extremity soft tissue abdominal wall and trunk and skeletal bone hyperthermia in sarcoma treatment isolated limb perfusion surgery for metastases reconstructive surgery radiation therapy systemic chemotherapy multidisciplinary care treatment induced sarcoma pain management in sarcoma and basic research including molecular biology and mouse models

**Immediate Postsurgical Prosthetics in the Management of Lower Extremity Amputees** Ernest M. Burgess, Joseph E. Traub, A. Bennett Wilson, United States. Veterans Administration. Prosthetic and Sensory Aids Service, 1967

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## The Enigmatic Realm of **21 Hip Disarticulation Sarcoma**: Unleashing the Language is Inner Magic

In a fast-paced digital era where connections and knowledge intertwine, the enigmatic realm of language reveals its inherent magic. Its capacity to stir emotions, ignite contemplation, and catalyze profound transformations is nothing lacking extraordinary. Within the captivating pages of **21 Hip Disarticulation Sarcoma** a literary masterpiece penned by a renowned author, readers attempt a transformative journey, unlocking the secrets and untapped potential embedded within each word. In this evaluation, we shall explore the book's core themes, assess its distinct writing style, and delve into its lasting effect on the hearts and minds of people who partake in its reading experience.

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