

SERVICE: Plastic Surgery / Head and Neck Surgery - JHH, PGY 3

General description:
<p>The Sinai surgical residents will rotate in the Department of Plastic Surgery at the Johns Hopkins Hospital during their 4th clinical year. The duration of this rotation is 6 weeks.</p> <p>The Sinai resident will be a fully integrated member of the Plastic Surgery team, under the supervision of the Hopkins Plastic Surgery fellow and attending staff.</p> <p>This rotation is designed to complement the exposure to Plastic Surgery that each resident receives throughout his/her training at Sinai Hospital, by providing a focused rotation in a high level, high volume academic setting. This rotation will also expose the surgical resident to the field of head and neck surgery in the pediatric and adult population for trauma, tumor and other head and neck disease.</p> <p>During the rotation, the residents will participate in the following educational activities:</p> <p>Plastic Surgery Core Curriculum - once a week</p> <p>Plastic Surgery Morbidity and Mortality Conference – once a week</p> <p>Johns Hopkins General Surgery Grand Rounds – once a week</p> <p>Operative Skills Laboratory – once a month</p> <p>Sinai General Surgery core Curriculum and end-of-rotation evaluation - once</p>

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Competencies:	Goals and Objectives:
Patient Care:	<p><u>Goals:</u></p> <p>During this rotation the resident should learn and practice to:</p> <ul style="list-style-type: none"> ▪ Demonstrate caring and respectful behaviors when interacting with patients and their families; demonstrate sensitivity to gender, age, ethnic, religious, value systems and other potential differences of patients and their families; practice according to the clinical standards of The Johns Hopkins Hospital ▪ Gather patient and case specific essential, comprehensive multi-source and accurate information about their patients for initial or peri-operative work-up and patient follow-up in the inpatient and outpatient setting ▪ Using all available resources, under the guidance of the Plastic Surgery fellow and attending, make informed decisions about diagnostic and therapeutic interventions based on patient information, up-to-date scientific evidence, and clinical judgment; evaluate and implement priorities in patient care and incorporate preventive measures ▪ Under the guidance of the Plastic Surgery fellow, attending and other designated Plastic Surgery related expert personnel, develop and carry out patient management plans

- Under the guidance of the Plastic Surgery fellow, attending and other designated Plastic Surgery related expert personnel, **monitor** closely the patients clinical progress; review and react to variances in patient progress or response to therapeutic interventions; **communicate** the details and changes of patient care, progress and complications to the Plastic Surgery fellow and/or attending in a timely manner
- Under close supervision of the Plastic Surgery fellow, attending and other designated Plastic Surgery related expert personnel, **counsel and educate patients** and their families on the state of the patient's disease, necessary diagnostic tests, operative procedures and medical management
- Use information technology (hospital computer system) to support patient care decisions and patient education (electronic patient record, electronic radiology studies, online educational resources, including literature research)
- **Work closely with other healthcare professionals**, including those from other disciplines (ENT, Neurosurgery, General and Trauma Surgery, Pediatric Surgery, mid-level providers, nurses, Plastic Surgery office staff, etc.), to provide patient-focused and optimum outcome driven care
- Ensure that the **needs of the patient and team supersede individual preferences** when managing patient care; incorporate evidence based medicine into patient care whenever possible; comply with changes in clinical practice and standards given by Plastic Surgery fellow and/or attending

Objectives:

During the rotation, the resident should:

- Outline the components of a **comprehensive focused history and physical examination** pertinent to the evaluation and correction of congenital or acquired defects under the realm of plastic and reconstructive surgery.
- Outline the components of a comprehensive examination of the face, neck, naso-, oro-, and hyo-pharynx.
- Initiate and follow-up work-up for problems related to trauma, neoplastic and other disease
- Under one-on-one supervision of the Plastic Surgery attending, **perform competently and/or assist in procedures considered essential for the area of practice** including:
 - a. Primary **repair of simple and complex lacerations** (in the Emergency Department and Operating Room) of various body areas
 - b. **Skin grafting, rotational and free flap reconstruction** for burn, traumatic, operative and other complex wounds in various body areas
- Participate in the **pre- and post-operative surgical management** of patients before and after major head and neck and reconstructive Plastic Surgery; attend Plastic Surgery clinic at least once a week; participate on daily morning and afternoon patient rounds

	<ul style="list-style-type: none"> ▪ Manage postoperative complications including wound infection/dehiscence, bleeding, systemic complications related to injury, anesthesia, co-morbidities and other factors
<p>Medical Knowledge:</p>	<p><u>Goals and Objectives:</u></p> <p>General</p> <ul style="list-style-type: none"> ▪ Discuss and compare skin and connective tissue according to: anatomy, histology, normal physiology and biochemistry; understand the pathophysiology of benign and malignant skin disorders and unique pathophysiology of connective tissue disorders and tumors. ▪ Develop a fundamental knowledge of normal wound healing and factors that influence this process: diabetes, vascular insufficiency (arterial and venous), steroids and immunosuppressive medications, renal and hepatic failure, protein and calorie malnutrition, vitamin and trace element deficiencies, etc. ▪ Explain the basic techniques for surgical repair of incisions and lacerations of the head, neck, trunk and extremities including the concepts of viability, perfusion, (lines of) tension, etc. ▪ Understand the specific differences in healing of skin, connective tissue, tendons, bone (with and without periosteal coverage) and nerves ▪ Describe the physiology and specific considerations for various techniques of skin and composite tissue transplantation with particular regard to component tissue (neo-) circulation: <ul style="list-style-type: none"> a. Skin grafts (split- vs. full- thickness) bone & cartilage grafts, composite grafts d. Skin flaps, muscle flaps, myocutaneous flaps, bone flaps, osteocutaneous flaps, myo-osseous flaps, neurocutaneous flaps j. Vascularized versus non-vascularized flaps ▪ Discuss the pathophysiology of thermal, chemical, and electrical burns including consideration of systemic pathophysiology (cardiac, pulmonary, renal, immune system, etc. (see Medical Knowledge Competency Burn Rotation) ▪ Explain considerations in the geriatric patient undergoing major reconstructive operation to include the implications of: <ul style="list-style-type: none"> a. Decreased functional physiologic reserve, multiple medical problems c. Altered wound healing; consider significance of: age, concomitant disease (diabetes, vascular disease, renal disease, etc.), (relative) malnutrition, medications; susceptibility for (nosocomial) infections d. Need for pre-operative evaluation, and intensive peri-operative monitoring ▪ Define the tumor, node and metastases (TNM) classification system as used for neoplasms of skin, soft tissue and head and neck. ▪ Develop an understanding of the relevant anatomy of specific body regions: <ul style="list-style-type: none"> a. Head and neck including functional skeletal units, vascular supply and lymphatic drainage, sensory and motor innervation

- b. Hand including neurovascular supply, compartments, etc. and upper extremity
- c. Foot and lower extremity
- d. Breast

Trauma

- Discuss the implications of **different types of soft tissue injury** (cut, blast, crush chemical and thermal burn) in terms of healing, considerations for reconstruction and potential complications; understand specific problems associated with prolonged exposure of bone, tendons, nerves and vasculature
- Explain the **assessment of facial skeletal trauma** according to the following systems:
 - a. LeFort I, II, and III classification of maxillary fractures
 - b. Nasoethmoidal disruption classification
 - c. Zygomatic, orbit and mandibular fractures
 - d. Disruption classification
- Understand the principles of **repair of facial trauma**:
 - a. Consideration of functional and cosmetic units
 - b. Options for bony reconstruction: temporary vs. permanent, sources for bone grafting
 - c. Options for rotational and free flap soft tissue coverage
- Discuss considerations in the (staged) repair for massive craniofacial trauma including temporary vs. permanent airway control, consideration of intracranial and other injuries in the overall planning of the facial reconstruction
- Understand the **comprehensive assessment** (grade, extent, involvement of joints and other critical areas, circumferential burn, etc.) **of burn injuries**; summarize the options for surgical treatment (see Burns Goals and Objectives, including escharotomy, early vs. delayed grafting, conservative therapeutic adjuncts, etc.)
- Describe the specific considerations for assessment of **hand trauma** (soft tissue injury with or without tissue loss, nerve and vascular injury, bony injury); describe the important functional units of the hand
- Understand the major considerations in the decision-making for reconstruction vs. amputation in upper and lower **mangled extremity** injuries:
 - a. Extent of tissue loss, extent of nerve and vascular damage
 - b. Expected residual function
 - c. Age and overall medical condition of the patient (acute and chronic)
 - d. Available resources and overall cost of (multiple) operations

Breast

- Discuss the options for **breast reconstruction after surgery for breast cancer**:
 - a. Immediate vs. delayed reconstruction
 - b. TRAM or other flap reconstruction vs. the use of artificial implants
 - c. Major (dis-)advantages of common types of implants
 - d. Different techniques of implantation (types of incisions and placement, minimally invasive techniques)

e. Techniques of nipple/areola reconstruction

- Discuss medical and cosmetic indications and techniques for **breast alteration surgery** (enlargement, reduction, repair of size difference and ptosis, etc.)

Complex hernias

- Discuss the role of the Plastic Surgeon in the evaluation, planning and execution of surgical therapy of complex abdominal wall hernias
 - a. abdominal wall component release/separation
 - b. component rectus fascia closure, use of tensor fascia lata
 - c. use of artificial materials (mesh)

Lymphangioma / Hemangioma

- Understand the basic etiology, histology, natural progression of (extremity) lymphangioma; describe the principles of medical and surgical therapeutic options
- Understand the basic etiology, histology, natural progression of hemangioma and related lesions (child type I – V vs. adult); describe the principles of medical and surgical therapeutic options (laser / phototherapy, injection therapy, resection, etc.)

Chronic wounds:

- Describe the etiology and contributing factors for common **chronic/non-healing wounds:**
 - a. Pressure ulcers (sacral, extremity, head, etc.)
 - b. Wounds related to vascular disease (arterial insufficiency, venostasis)
 - c. Diabetic wounds
 - d. Wounds due to radiation
 - e. Calciphylaxis
 - f. Vasculitis and other connective tissue disorders, pyoderma gangrenosum, chronic lymphedema
 - g. Actinomycosis, Yaws, mucormycosis, cutaneous Anthrax and other chronic infectious wounds
- Understand options for **medical/conservative therapy** (bedside debridement vs. debriding-type dressings [enzymatic vs. mechanical], V.A.C. therapy, etc.)
- Describe options indications and contra-indications for **surgical reconstruction:** (composite-) flaps, etc., vs. amputation (extremity)
- Understand options for **supportive therapy and prevention** including devices to reduce pressure, restoration of blood flow, nutritional therapy, antibiotic therapy, hyperbaric oxygen therapy, etc.
- Discuss the **potential systemic (long-term) complications** of chronic non-healing and/or infected wounds, including: (recurrent) bacteria and endocarditis, osteomyelitis, progressive cellulitis, heterotopic bone formation, pain, amyloidosis, complications related to immobility/loss of function, etc.

Congenital anomalies of the head and neck:

- Describe the most common congenital anomalies including classifications
 - a. first through fourth branchial arch anomalies
 - b. cleft lip and palate
 - c. micro- (Pierre Robin, Treacher Collins' syndromes, etc.) and macrognathia
 - d. craniosynostosis (turricephalus, trigonocephalus, brachycephalus, etc.)
- Understand the basic principles of corrective surgery for these disorders including indication and timing for surgery

Soft tissue/skin tumors

- Understand and describe the characteristics for the most common differential diagnoses for tumors of the skin, including: Actinic Keratosis, Bowen Disease, Fibrous Papule of the Face, Keratoacanthoma, Nevi, Melanocytic, Sebaceous Hyperplasia, Seborrhic Keratosis, Squamous Cell Carcinoma, Trichoepithelioma, warts, atypical Fibroxanthoma, Pyoderma, etc.
- Understand the etiology, age and anatomic distribution, and staging of **basal cell carcinoma (BCC)**; describe the use of (punch) biopsy in the diagnosis; describe surgical options for therapy (curettage, excision with margin examination and Mohs microsurgery, radiotherapy and cryotherapy); describe the indications, limitations and potential problems with medical therapy (5-Fluorouracil, Interferon alfa-2b); describe the prognosis and risks for subsequent lesions in patients with BCC
- Understand the etiology, age and anatomic distribution and staging of **squamous cell carcinoma of the skin (SCC)**; describe the TNM classification, modes of spread and implications for therapy; describe the options for (adjunct) medical therapy (5-FU +/- Radiation therapy, Aminolevulinic acid and Photodynamic therapy – mainly for actinic Keratosis), and options for surgical therapy (curettage and electrosurgery, cryosurgery, excision); describe optimal margins for well-differentiated and high risk tumors and recurrence rates related to stage and tumor biology
- Understand the etiology, age and anatomic distribution and staging of **Melanoma**; discuss different histologic types (superficial spreading, Nodular, Lentigo maligna, acral lentiginous, desmoplastic) and TMN vs. Clark vs. Breslow staging and AJCC groupings; describe stage-directed surgical therapy and (neo-) adjuvant therapy options; describe prognosis/ outcomes in different stages of the disease
- Describe **options for reconstruction in anatomically difficult regions**, i.e., face/hand, etc.

Head and Neck Cancer

- Understand the etiology, age, anatomic distribution and staging of head and neck cancer; describe TNM staging and common pathways of metastasis, depending on location; understand the fundamentals of medical (chemo-, photosensitizing-, immune-, gene-), radio- and surgical therapy
- Develop basic understanding of principles of resection and reconstruction of head and neck tumors in various locations

	<p><u>Objectives – General:</u></p> <ul style="list-style-type: none"> ▪ Complete the reading assignment (see literature list) ▪ Attend all (≥ 85%) conferences, M&M conferences, Grand Rounds/other educational activities of the division of Plastic Surgery during the rotation ▪ Take a post-rotation self-assessment test with at least 75% correct answers
<p>Practice-based Learning and Improvement:</p>	<p><u>Goals and Objectives:</u></p> <p>Residents must be able to investigate and evaluate their patient care practices, appraise and assimilate scientific evidence and improve their patient care practices. Residents are expected to:</p> <ul style="list-style-type: none"> ▪ <u>Self-assessment:</u> Analyze practice experience during the rotation and own performance based on interaction with Plastic Surgery fellow, attending(s) and other key Plastic Surgery staff; accept and use constructive criticism to improve performance in the six core competencies ▪ <u>Medical knowledge:</u> Self-directed and under mentorship of Plastic Surgery fellow and attending staff, locate, appraise and assimilate evidence from scientific studies related to their patient’s health problems; use evidence based medicine approach to patient care whenever possible; apply knowledge of study designs and statistical methods to the appraisal of clinical studies and other information on diagnostic and therapeutic effectiveness; use information technology to manage information, access online medical information and support their own education; facilitate the learning of students and other healthcare professionals on the Plastic Surgery service by sharing pre-existing and newly acquired knowledge (general and case-based) on rounds and during formal educational activities. Residents are encouraged to ask/question the Plastic Surgery fellow, attending staff and/or other Plastic Surgery related expert providers for clarification of unclear concepts/practices at any time. <p>Participate in the <u>perioperative management of Plastic Surgery patients</u> as outlined in patient care competency. During the rotation the resident should become familiar/proficient with:</p> <ol style="list-style-type: none"> a. Comprehensive, focused history and physical examination for Plastic Surgery/Head and Neck surgery patients b. Evaluation of wound healing/flap and/or graft viability c. Various methods of conservative wound management d. Management of postoperative complications including wound infection, dehiscence, bleeding, flap ischemia, systemic complications, etc. <ul style="list-style-type: none"> ▪ Perform/participate in <u>Plastic Surgery service related operations</u> as outlined in patient care competency; during the rotation the resident should become familiar/proficient with: <ol style="list-style-type: none"> a. Harvest and application of skin and composite grafts

	b. Repair of complex wounds including debridement
<p>Interpersonal and Communication Skills:</p>	<p><u>Goals and Objectives:</u></p> <p>Residents must be able to demonstrate interpersonal and communication skills that result in effective information exchange and teaming with patients, their patients families and professional associates. Residents are expected to:</p> <ul style="list-style-type: none"> ▪ Develop interpersonal skills necessary to communicate effectively with patients, patient families, nursing staff, mid-level healthcare providers, ancillary staff, medical students, fellow residents and attending staff in the complex multi-specialty environment that constitutes Plastic Surgery ▪ Contribute to creating an atmosphere of collegiality and mutual respect with all providers involved in the care of patients ▪ Develop effective listening, questioning and documentation skills ▪ Demonstrate ability to work effectively as a member of a team ▪ Demonstrate ethically sound behavior (see also Professionalism) ▪ Share own knowledge with other members of the team to foster an environment of learning
<p>Professionalism:</p>	<p><u>Goals and Objectives:</u></p> <p>Residents must demonstrate a commitment to carrying out professional responsibilities, adherence to ethical principles and sensitivity to a diverse patient population. Residents are expected to:</p> <ul style="list-style-type: none"> ▪ Demonstrate adherence to institutional and departmental standards and policies ▪ Demonstrate respect, compassion, integrity and ethical behavior that are consistent with the values of the department, institution and The Johns Hopkins University School of Medicine; develop and sustain sensitivity towards differences of age, gender, culture, religion, ethnicity or other diversities in both co-workers and patients. ▪ Demonstrate ability to appropriately take on, share and delegate responsibilities with regard to patient care; balance own rights and privileges appropriately with responsibilities and accountability resulting from being a member of a team dedicated to patient care ▪ Demonstrate commitment to excellence and ongoing professional development ▪ Under attending and other Plastic Surgery staff guidance, develop skill to resolve potential problems and conflicts in a complex corporate environment using the appropriate channels and methods of communication and maximize patient care and surgical service performance ▪ Evaluate and formulate a response to ethical questions
<p>Systems-based Practice:</p>	<p><u>Goals and Objectives:</u></p> <p>Residents must demonstrate an awareness of and responsiveness to the larger context and system of healthcare and the ability to effectively call on system resources to provide</p>

	<p>care that is of optimal value. Residents are expected to:</p> <ul style="list-style-type: none">▪ Understand how choices in patient care and other professional practices affect other healthcare professionals, the healthcare organization and the larger society and how these elements of the system affect their own practice<ul style="list-style-type: none">a. Average cost ofb. Understand the relevance and components of clinical pathways and how to deal with deviation.▪ Practice cost-effective healthcare and resource allocation that does not compromise quality of care▪ Know how to partner with healthcare managers (Plastic Surgery coordinator, Social Work, Case Management, PT/OT and Rehabilitation Medicine, etc.) and other healthcare providers (PMD, specialty providers in and out of the hospital) to assess, coordinate and improve healthcare for the individual patient and cohorts of patients
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