**AO Soft-Tissue Management curriculum document**

Patient problems, competencies and objectives

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Patient problems to address in the curriculum and educational offerings

**Surgical-site infection (prevention)**

* Apply antibiotic prophylaxis adequately
* Practice adequate debridement (incl irrigation)
* Optimize patent factors
* Recognize compromised tissue vs non-compromised (eg, wound assessment)
* Understand risk factors for infection (eg, high-energy injuries)
* Maintain blood supply and blood pressure
* Apply intraoperative workflow (eg, team, OR door open)
* Train the team
* Manage surgical drains
* Know the environment of the OR
* Adequate management of dead space, layered closure, hemostasis
* Use appropriate exposure techniques, approaches
* Use appropriate instruments (right way, right time etc)
* Acknowledge the "Myth" of infection prevention (evidence-based vs non-evidence based)
* Apply adequate dressing post closure (incl vacuum dressings)
* Decide on appropriate immobilization strategy
* Apply Orthosis management
* Appropriate post-operative management of the wound
* Early recognize wound problems
* Recognize factors that influence wound healing

**Scars**

* Identify type of scar and how to manage
* Apply techniques to manipulate scar formation process
* Apply appropriate physiotherapy

**Soft-tissue defect**

* Recognize the zone of injury
* Optimize the wound
* Properly identify missing or malpositioned soft tissue
* Select and appropriate closure/coverage using the "reconstructive modules" (incl grafts, flaps)
* Recognize limits of each closure technique
* Recognize own limits and decide on possible referral
* Perform adequate post-operative management

**Radiation/Chronic tissue changes due extrinsic and intrinsic factors**

* Recognize the physiologic effect that radiology has on soft-tissue healing
* Recognize if different management options are needed in radiated wounds
* Recognize if different management options are needed in radiated tissue

**Chronic wounds**

* Appreciate the etiology and physiology of the wound
* Apply adequate treatment strategy

**Peripheral nerve sensory / motor**

* Identify type of nerve injury and natural history
* Recognize timing and type of reconstruction based on type, location and age of patient
* Recognize different techniques of reconstruction
* List indications and techniques for investigation of nerve injuries (eg, MRI, EMG, NCS)
* Apply appropriate postoperative therapy (eg, splints, motion)

**Central nerve (AOSpine)**

* Recognize techniques of dural closure
* Recognize CSF leaks

**Tendons and ligaments**

* Restore and maximize blood supply
* Apply suturing and fixation techniques (bone / tendon fixation)
* Apply appropriate physiotherapy

**Vascular / vascular injury**

* Recognize the vascular anatomy of the different soft tissues and how it affects healing
* Recognize and apply different techniques to achieve hemostasis
* List the principles of vascular repair
* Recognize the indications for preoperative vascular imaging

**Compartment syndrome**

* Diagnose compartment syndrome
* Perform fasciotomy
* Manage chronic compartment syndrome

**Pain management**

* Recognize etiology of pain

**The competencies (abilities) we want to improve in our target audiences**

1. Apply principles of soft tissue and instrument handling in the surgical treatment of acute and chronic wounds
2. Manage the healing process, restore form and function, and minimize pain
3. Demonstrate strategies and techniques for achieving adequate hemostasis
4. Apply evidence-based strategies and techniques to minimize surgical site infection
5. Manage tissue changes due to environmental and patient factors in acute or chronic wounds
6. Recognize and treat soft-tissue defects, losses, and deformities and maximize cosmesis
7. Recognize and treat vascular injuries
8. Recognize and treat peripheral nerve injuries
9. Recognize and treat compartment syndrome (AO Trauma, AOVET only)
10. Recognize and treat ligament and tendon injuries (AOT, AOCMF, AOVET only)
11. Recognize and treat central nerve injuries (AOSpine only)

**Objectives to be achieved for each Competency: Knowledge, skills, attitudes**

Competency 1: Apply principles of soft tissue and instrument handling in the surgical treatment of acute and chronic wounds

|  |  |  |  |
| --- | --- | --- | --- |
| Objective | K | S | A |
| Recognize the zone of injury | x |  |  |
| Describe limits of each primary closure technique | x |  |  |
| Recognize own limitations based on patient outcomes and when to refer |  |  | x |
| Practice adequate debridement (incl irrigation) |  | x |  |
| Preserve viability of soft tissues and bone (eg, zone of injury) |  | x | x |
| Apply techniques of dead space management | x | x |  |
| Apply appropriate surgical exposure and closure |  | x |  |
| Select and apply appropriate instruments (right way, right time etc) | x | x | x |
| Apply and manage appropriate dressings (eg, vacuum dressings) | x | x |  |

Competency 2: Manage the healing process, restore form and function, and minimize pain

|  |  |  |  |
| --- | --- | --- | --- |
| Objective | K | S | A |
| Describe systemic and local patient factors that affect healing | x |  |  |
| Recognize compromised tissue vs non-compromised tissue | x |  | x |
| Describe the effects of environmental factors | x |  |  |
| Employ appropriate immobilization strategy | x |  | x |
| Apply appropriate post-operative management of the wound (eg, showering, wound appearance, dressings) | x |  | x |
| Recognize wound problems | x |  |  |
| List factors that influence wound healing | x |  |  |
| Describe appropriate physiotherapy | x |  | x |
| Describe effective pain management strategies | x |  | x |
| Describe systemic and local patient factors that affect healing | x |  |  |
| Recognize compromised tissue vs non-compromised tissue | x |  | x |
| Describe the effects of environmental factors | x |  |  |

Competency 3: Demonstrate strategies and techniques for achieving adequate hemostasis

|  |  |  |  |
| --- | --- | --- | --- |
| Objective | K | S | A |
| Describe factors affecting hemostasis | x |  |  |
| Apply techniques of hemostasis |  | x | x |

Competency 4: Apply evidence-based strategies and techniques to minimize surgical site infection

|  |  |  |  |
| --- | --- | --- | --- |
| Objective | K | S | A |
| List risk factors for infection (eg, high-energy injuries, surgical wound classification - CDC) | x |  |  |
| Describe best practices guidelines in antibiotic prophylaxis and therapy | x |  | x |
| Recognize the impact of adequate debridement (incl irrigation, swabs, biopsy) | x |  | x |
| Optimize intraoperative workflow to minimize infection (eg, team, OR door open) | x |  | x |
| Evaluate the use of surgical drains | x |  | x |
| Acknowledge the "Myths" of infection prevention (evidence-based vs non-evidence based, eg, facial hair, double gloves etc) |  |  | x |
| Manage dead space |  | x |  |
| Recognize early onset wound infections | x |  |  |

Competency 5: Manage tissue changes due to environmental and patient factors in acute or chronic wounds

|  |  |  |  |
| --- | --- | --- | --- |
| Objective | K | S | A |
| Describe the pathophysiological effects of radiotherapy on soft tissue | x |  |  |
| Describe the management options for radiated wounds | x |  | x |
| Describe implications for wound healing in specific populations (eg, burns, elderly, chronic steroids, diabetes) | x |  |  |

Competency 6: Recognize and treat soft-tissue defects, losses, and deformities and maximize cosmesis

|  |  |  |  |
| --- | --- | --- | --- |
| Objective | K | S | A |
| Apply techniques to manipulate scar formation process (eg, recreation of defect, tissue release, tissue mobilization) | x | x |  |
| Identify type of scar and potential management options (eg, physiotherapy) | x |  | x |
| Apply scar revision techniques | x | x | x |
| Properly identify missing or malpositioned soft tissue | x |  | x |
| Select and perform appropriate closure/coverage using the reconstructive principles (reconstructive ladder/modules) (incl grafts, flaps) | x | x | x |
| Describe and apply methods for edema management | x | x | x |
| Describe and apply methods for redundant/excess tissue correction | x | x | x |

Competency 7: Recognize and treat vascular injuries

|  |  |  |  |
| --- | --- | --- | --- |
| Objective | K | S | A |
| Describe the vascular anatomy of the different soft tissues and how it affects healing | x |  |  |
| Describe the indications for preoperative vascular imaging | x |  |  |
| Describe and apply the principles of vascular repair | x | x |  |

Competency 8: Recognize and treat peripheral nerve injuries

|  |  |  |  |
| --- | --- | --- | --- |
| Objective | K | S | A |
| Describe the nerve anatomy | x |  |  |
| Diagnose, classify, and describe the prognosis of nerve injury (eg, MRI, EMG, NCS) | x |  |  |
| Describe and apply the principles and timing of nerve repair/reconstruction | x | x | x |
| Describe appropriate postoperative therapy (eg, splints, motion) | x |  |  |
| Describe effective pain management strategies | x |  | x |

Competency 9: Recognize and treat compartment syndrome (AO Trauma, AOVET only)

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| --- | --- | --- | --- |
| Objective | K | S | A |
| Recognize compartment syndrome (K, S, A) | x | x | x |
| Perform fasciotomy (S) |  | x |  |
| Manage chronic compartment syndrome (K, A) | x |  | x |

Competency 10: Recognize and treat ligament and tendon injuries (AOT, AOCMF, AOVET only)

|  |  |  |  |
| --- | --- | --- | --- |
| Objective | K | S | A |
| Apply suturing and fixation techniques (bone / tendon fixation) | x | x |  |
| Apply appropriate physiotherapy | x |  |  |

Competency 11: Recognize and treat central nerve injuries (AOSpine only)

|  |  |  |  |
| --- | --- | --- | --- |
| Objective | K | S | A |
| Recognize techniques of dural closure | x |  |  |
| Recognize and restate CSF leaks | x |  |  |