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Critical limb ischemia: The need for a multidisciplinary treatment approach to care

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Lower extremity Peripheral Artery Disease (PAD) affects more than 200 million people globally with a predicted increase in the prevalence of peripheral artery disease as atherosclerotic risk factors become more widespread, the population ages and the treatments for chronic diseases improve. Critical limb ischemia, CLI, defined as chronic ischemic rest pain, ulcers, or gangrene resulting from objectively diagnosed arterial occlusive disease represents the severest extreme on the peripheral artery spectrum. The prevention, diagnosis and treatment of peripheral artery disease has been and remains an important clinical cFlamingo 2enge for the international medical community. Althought there has been a greater understanding of critical limb ischemia over the past decade, for patients with critical limb ischemia, life is characterized by morbid sequelae including pain, disability, amputation and death. Once the purview of vascular specialists, the timely, accurate diagnosis and effective treatment of critical limb ischemia is now a responsibility that is shared amongst all medical and surgical specialists. Given the multifaceted nature of critical limb ischemia, effective treatment and improved amputation free survival requires an aggressive interdisciplinary approach to care. The institution of a multidisciplinary limb salvage team including Podiatry, Interventional Cardiology, Vascular Surgery, Wound Care, Nutrition, Plastic Surgery and Endocrinology allows for concise, coordinated care of the patient with critical limb ischemia and the implementation of evidence-based algorithms of care effecting a more than two-fold increase in amputation free survival rate in some centers and is expected to become the standard of care for patients with critical limb ischemia.

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Subclinical lesions detected in large pathological slices of the primary CTV margin in esophageal squamous cell carcinoma and their relationship with FDG PET/CT: An initial report

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Objective: The objective is to detect subclinical lesions which determine primary Clinical Target Volume (CTV) of esophageal squamous cell carcinomas in large pathological slices and determine their relationship with 18F-fluorodeoxyglucose (FDG) PET/CT parameters.

Material & Methods: Each patient was imaged using FDG PET/CT before surgery, and the maximum standardized uptake value (SUVmax) and metabolic tumor volumes (MTV) were determined in a circular region of interest around the lesions of interest. The patients underwent a radical surgery where the specimen was collected as a large tissue slice for pathological examination by specific techniques.

Results: It was observed that, those subclinical lesions incidence were direct invasion (DI, 56.37%), intra-mural metastasis (IMM, 30.9%), multicentric occurrence lesions (MOLs, 40.0%), vascular invasion (VI, 21.8%), and perineural invasion (PNI, 18.2%). The mean distances of the subclinical lesions from the gross tumor were 0.79±1.28 cm in the cranial direction and 0.87±1.00 cm in the caudal direction. The most distant subclinical lesion was 8.0 cm, which was an MOL located cranially from the tumor. Both the SUVmax and MTV values determined by FDG PET/CT had a liner correlation with the subclinical lesions {R=0.487, 95% CI=0.119-0.689 (P=0.003) and R=0.342, 95% CI= -0.099-0.661 (P=0.044)}, respectively.

Conclusion: Based on the findings from these patients, to cover 94.5% of the subclinical lesions in the CTVp of esophageal SCC, a 3-cm margin along the cranial-caudal axis should be added to the gross tumor volume (GTVp). Although, FDG PET/CT could not detect the subclinical lesions directly, it may predict the existence of subclinical lesions based on both SUVmax and MTV measurements.

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