# Complex Presentation of Immune Checkpoint Inhibitor Myocarditis

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## Introduction
- Immune checkpoint inhibitors (ICI) have revolutionized oncological treatment and thus continue to be utilized for various cancers.
- ICI therapy can carry life-threatening immune-related adverse events (irAEs).
- ICI myocarditis is a complex process with prevalence of 1% and mortality rate of 25-50%.

## Case
- 78 y/o male with buccal mucosa squamous cell carcinoma treated with cetuximab four weeks prior, underwent elective mandibullectomy complicated by inferior ST elevation myocardial infarction (STEMI) and myocarditis.
- Postop inferior STEMI treated with emergent revascularization of occluded right coronary artery (RCA), normal echocardiogram post revascularization.
- Two days later, patient developed chest pain, frequent NSVT, rising cardiac biomarkers, worsening ST elevations and transient high degree AV block.
- Repeat catheterization with patent RCA stent, endomyocardial biopsy performed and confirmed diagnosis of myocarditis.
- Methylprednisolone 1g IV x 3 days followed by 1mg/kg oral prednisone daily with slow taper for 8 weeks.

## Diagnostics
- **A.** Postop ECG showing inferior STEMI
- **B.** Initial postop catheterization showing RCA occlusion.
- **C.** Repeat catheterization with patent RCA stent, endomyocardial biopsy performed.

## Conclusion/Discussion
- ICI myocarditis varies in presentation, ultimately requiring high index of clinical suspicion.
- Prompt diagnosis and treatment is crucial for favorable outcomes.
- cMRI is more specific than conventional cardiac testing with cardiac biomarkers, electrocardiograms and echocardiograms.
- Diagnostic gold standard is endomyocardial biopsy.
- Treatment includes early initiation of high dose steroids followed by a slow taper for 4 to 6 weeks and discontinuation of ICI therapy.
- Additional use of intravenous immunomodulators such as Abatacept can be considered if there is an inadequate response to steroids.

## References