

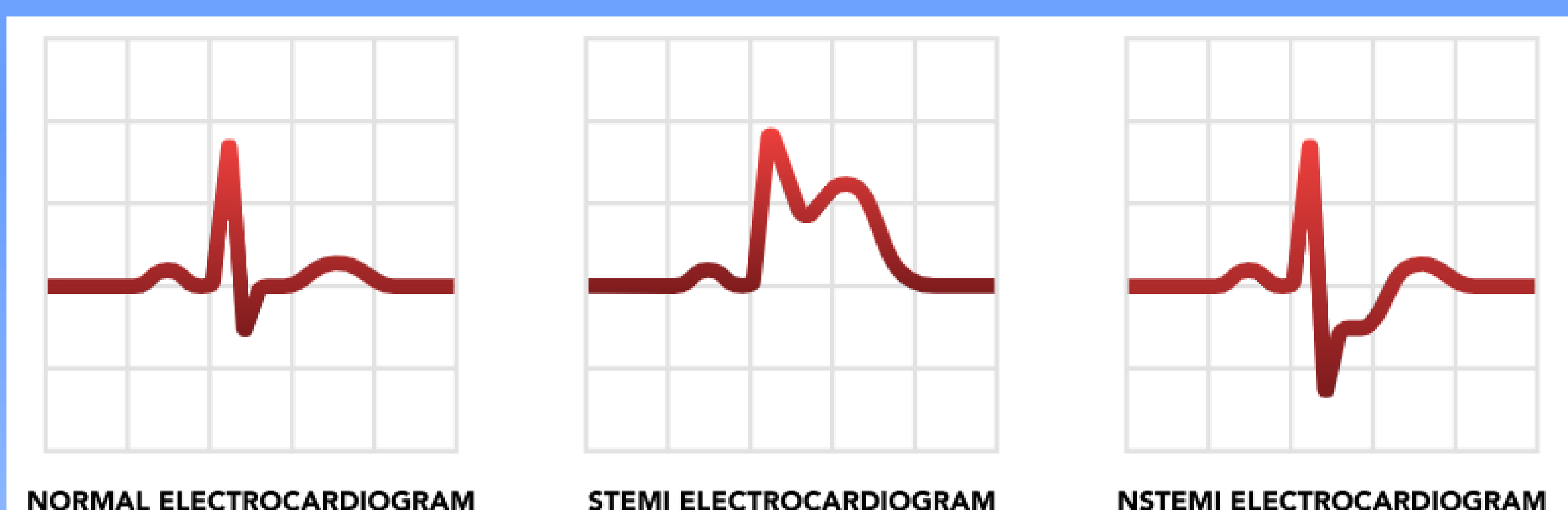
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Background

- Although clozapine is an FDA-approved atypical antipsychotic medication for treatment-resistant schizophrenia, it is not the first-line drug of choice due to its range of adverse side effects, including seizures, myocarditis, and paralytic ileus.
- Lesser-known reported side effects of clozapine are non-ST-elevation myocardial infarctions (NSTEMIs) and pericardial effusions in the absence of myocarditis.¹
- There is limited understanding of the pathophysiology behind its cardiac side effects. Postmortem myocardial biopsy in a few cases revealed eosinophilic infiltrates.
- Additionally, increased levels of IgE have been noted, indicating the role of IgE-mediated type I hypersensitivity reaction.²
- The following case highlights a complex presentation of clozapine toxicity with atypical cardiac findings of an NSTEMI and worsening pericardial effusion.

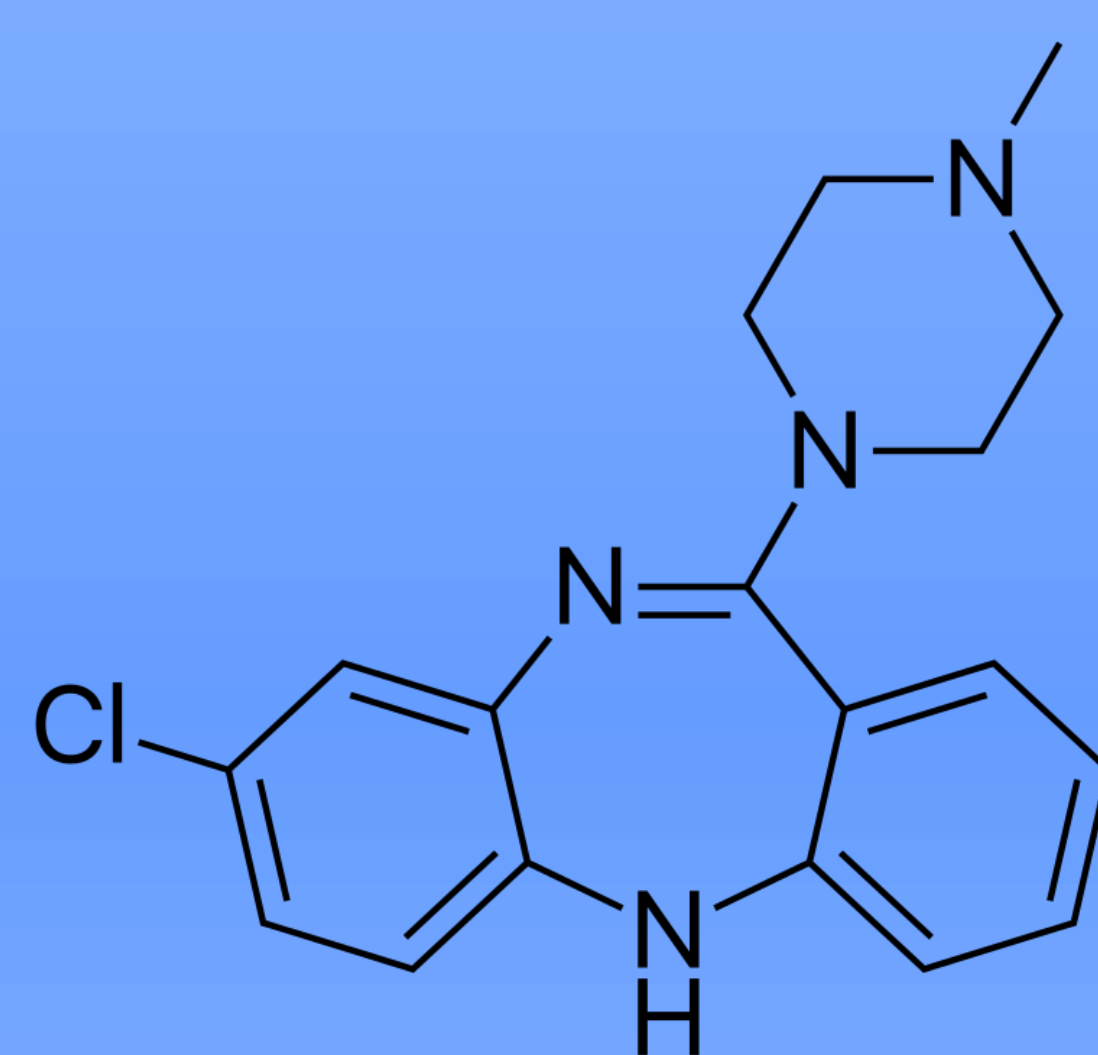


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Case Presentation

- The patient is a 58-year-old man with a past psychiatric history of schizophrenia and past medical history of hypertension, hyperlipidemia, type II diabetes mellitus, hypothyroidism, and pericardial effusion without tamponade (diagnosed one year ago) who was medically hospitalized after having two days of shortness of breath, generalized weakness, and lightheadedness.
- C/L psychiatry was consulted for medication management.
- The patient had a transaminitis and elevated cardiac enzymes, likely secondary to a late presentation of an NSTEMI. A pericardial window was performed due to concerns about a chronic pericardial effusion progressing to tamponade.
- The patient has been on clozapine for at least ten years prior to admission to better manage psychotic symptoms including disorganized speech, disorganized behaviors, and delusional thinking. His clozapine level on day 1 of admission was 785 ng/ml.
- Clozapine was discontinued due to concerns that it was contributing to his presentation.
- The patient had resolution of physical symptoms and was medically cleared after discontinuation of clozapine and the pericardial window.
- The patient began having worsening psychotic symptoms, including more disorganized behaviors and speech (word salad, overproductive). He was then transferred to an inpatient psychiatric facility for further safety and stabilization.
- While inpatient, patient was started on loxapine (due to structural similarities to clozapine) and risperidone with significant reduction of symptoms and was subsequently discharged back to his residence.



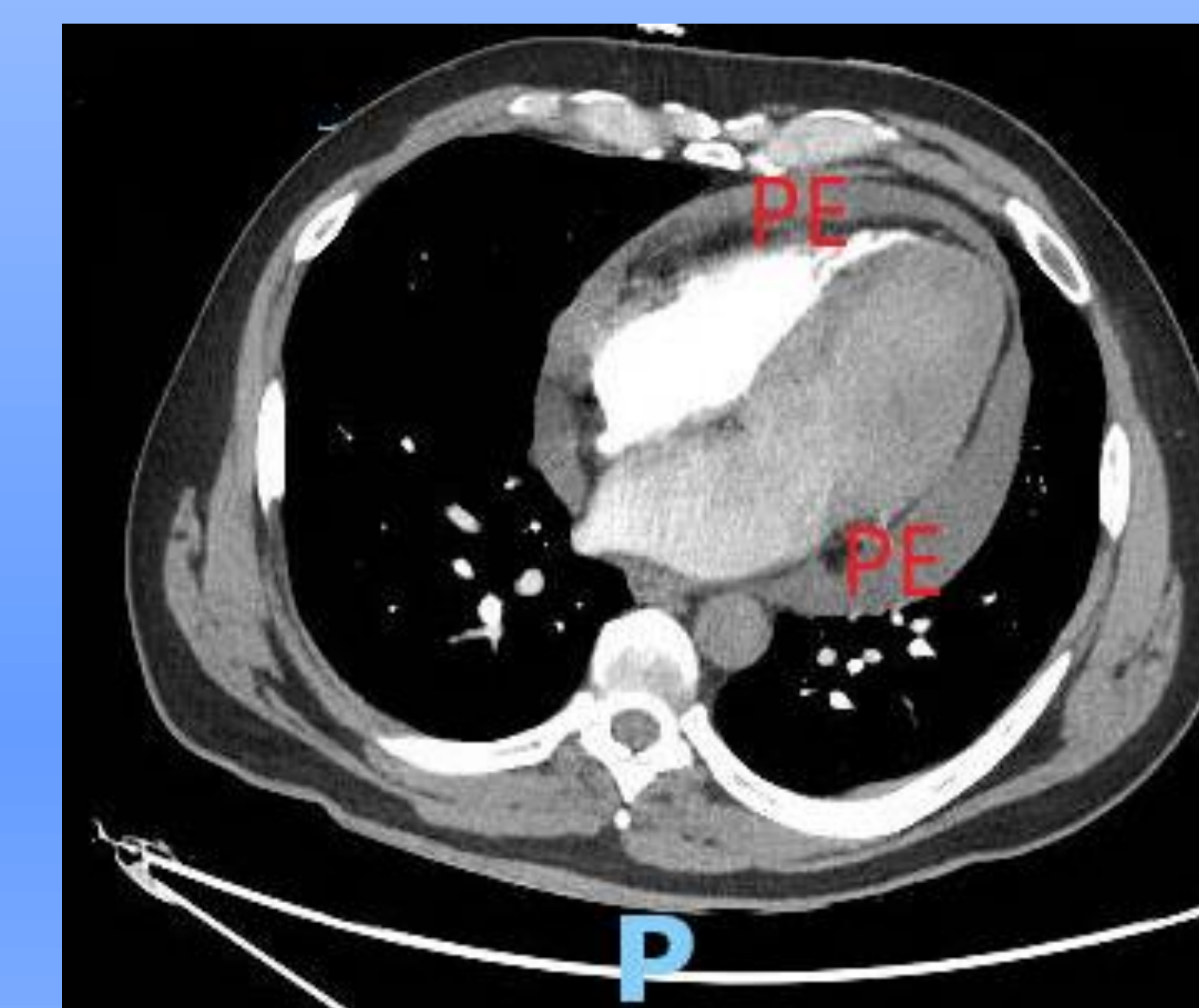
Structural Formula
for Clozapine



Structural Formula
for Loxapine

Discussion

- There has been literature suggesting that clozapine is associated with cardiac complications including myocarditis and cardiomyopathy.
- There are some studies indicating that pericardial effusion is a rare (< 1:10,000) adverse effect of clozapine, however, less is known about the association between NSTEMIs and clozapine.³
- In general, pericardial effusions are associated with ST-elevation myocardial infarctions (STEMIs) rather than NSTEMIs, occurring in approximately one-third of STEMIs.⁴
- This case is unique in that it highlights a complex potential association between clozapine toxicity, NSTEMIs, and pericardial effusions.



Patient's CT Angio Chest with
Pericardial Effusion

Conclusion

- NSTEMIs and pericardial effusions should be considered as possible adverse effects of clozapine toxicity.
- Consultation-liaison psychiatrists should be mindful of these rare, but important cardiac developments as a sign of clozapine cardiac toxicity even in the absence of myocarditis.