

OP6 REVERSE WELLENS: NEW APPROACH TO DETECT ECG CHANGES IN SEVERE HYPOKALEMIA

HAMDIL¹, SYAFIQAH², AZLIZA³

DEPARTMENT OF EMERGENCY AND TRAUMA, HOSPITAL PEKAN, PAHANG, MALAYSIA

Introduction

Reverse Wellens is the term which had been use since 2016 by Dr Amal Mattu, the Professor of Emergency Medicine at the University of Maryland School of Medicine in Baltimore, Maryland. Basically, Reverse Wellens is the mirror image of Wellens syndrome and it can be detected when patient having severe hypokalemia.

Case Report

A 30-year-old woman with Gravida 3 Para 1 at 13 weeks POA presented to our emergency department with nausea and vomiting for the past 1 week. Her symptoms worsened since 3 days prior to admission. Otherwise, no chest pain, no shortness of breath, no fever and no hyperthyroid symptoms. Multiple visit to healthcare with urine ketone 3+, but patient refused for admission and request for discharge at own risk.

Upon presentation, she was alert and conscious. Her hydration status was normal. Vital sign was normal with borderline tachycardia with PR 96 bpm. Electrocardiogram was done shows prolong QT interval with ST depression over inferior leads and V4-V6. Blood investigations showed her potassium level was 2.4. She was diagnosed as severe

hypokalemia secondary to hyperemesis gravidarum. She was referred to medical and obstetric team for further management.

During the course of admission, she was given intravenous potassium correction total 8g KCL. Upon discharge, her symptoms improving and electrocardiogram shows normal sinus rhythm.

Discussion

Amal Mattu coin this ECG changes as “reverse Wellen’s” pattern formed by an inverted broad T wave followed by a positively deflected U wave as NikEleKam T waves (named by hybridizing his kids name). This pattern occurs in extreme hypokalemia.

In some ways it makes sense. The classic Hyperkalemia T wave is peaked – narrow and strongly positively deflected. In this case the T wave of extreme Hypokalemia is broad and negatively deflected. The addition of the U wave is confusing since we’re not used to seeing them.

Conclusion

Think of few differentials for ECG changes especially in previously healthy young age patient. In our case it was due to severe hypokalemia.

Keyword

Hypokalemia, Reverse Wellens