Osborn Waves


Fifty two year old male presented with history of fever, cough for one month and altered sensorium for one day. At admission patient was confused with Glasgow coma scale (GCS) of 11/15, BP 80/50 mm of Hg, Pulse rate of 54/minute and temperature of 34°C. ECG showed Osborn or ‘J’ waves (Figure 1). Patient was managed with ionotropic support, external rewarming and nutritional support. Patient on further investigation had evidence of disseminated tuberculosis and was found to have adrenal insufficiency. Patient was started on anti tubercular treatment along with hydrocortisone. Patient symptomatically improved with normalisation of blood pressure, sensorium and disappearance of Osborn waves in ECG.

The Osborn wave is a deflection with a dome or hump configuration occurring at the R-ST junction (J point) on the surface ECG. It was first described by Dr. John Osborn in the year 1953 as an “injury current” resulting in ventricular fibrillation during experimental hypothermia. However more recent evidence suggest that hypothermia increases the epicardial potassium current relative to the current in the endocardium during ventricular repolarization and this transmural voltage gradient is reflected on the surface electrocardiogram as Osborn wave. The other causes of prominent Osborn waves include early repolarization variant, hypercalcemia, and the Brugada syndrome.1 They are also named as camel-hump waves or hypothermic waves. They become more prominent with fall of body temperature and gradually resolve with rewarming.2

References