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The Camassa-Holm equation with linear dispersion was originally derived as an asymptotic equation in shallow water wave theory. Among its many interesting mathematical properties, which include complete integrability, perhaps the most striking is the fact that in the case where linear dispersion is absent it admits weak multi-soliton solutions - “peakons” - with a peaked shape corresponding to a discontinuous first derivative. There is a one-parameter family of generalized Camassa-Holm equations, most of which are not integrable, but which all admit peakon solutions. Numerical studies reported by Holm and Staley indicated changes in the stability of these and other solutions as the parameter varies through the family. In this presentation, I describe analytical results on one of these bifurcation phenomena, showing that in a suitable parameter range there are stationary solutions which are orbitally stable. (Received February 14, 2012)