The Black-Scholes option pricing model is well known to be a limit of binomial tree models. What happens if the branching times of the binomial tree are given by a random point process, such as the self-exciting Hawkes process commonly used to model order arrivals in the electronic limit order book that determines the price of the stock? In this case, the limit is a version of the Black-Scholes model based on a time-changed Brownian motion calibrated to the market clock of the limit order book. In certain cases we can explicitly compute the price of a European call option as a function of the accumulated intensity of price changes over the life of the option. (Received February 01, 2020)