Consider a large parallel plate capacitor as shown, charging so that $Q = Q_0 + \beta t$ on the positively charged plate. Assuming the edges of the capacitor and the wire connections to the plates can be ignored, what is the magnitude of the magnetic field $B$ halfway between the plates, at a radius $r$?
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\[
\frac{\mu_0 \beta}{2\pi r}
\]

A. \( \frac{\mu_0 \beta}{2\pi r} \)

B. \( \frac{\mu_0 \beta r}{2d^2} \)

C. \( \frac{\mu_0 \beta d}{2a^2} \)

D. \( \frac{\mu_0 \beta a}{2\pi r^2} \)

E. None of the above