Hi,
I have followed what you have done, and I have almost the same plot as you, if I analyse the file with your macro.

I have run fast_sim to check the output. It seems each pz has a "spacing" of exactly 0.0005 GeV/c.
I have checked the output.evt file, but there all the numbers are not so spaced. For this reason, I think the problem stays not in EvtGen, but in our reading the ASCII file. Maybe there is some conversion/rounding which is cutting our momentum with a resolution of 500 keV -> even the angles suffer from this rounding.
At the moment I cannot find the source of such a problem, maybe somebody else could comment about.