Subdivisions of a large clique in C_6-free graphs.

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(Joint work with József Balogh and Hong Liu.)

Mader conjectured that every C_4-free graph has a subdivision of a clique of order linear in its average degree. We show that every C_6-free graph has such a subdivision of a large clique.
We also prove the dense case of Mader's conjecture in a stronger sense, i.e. for every c, there is a c' such that every C_4-free graph with average degree $cn^{1/2}$ has a subdivision of a clique K_ℓ with $\ell = \lfloor c'n^{1/2} \rfloor$ where every edge is subdivided exactly 3 times.