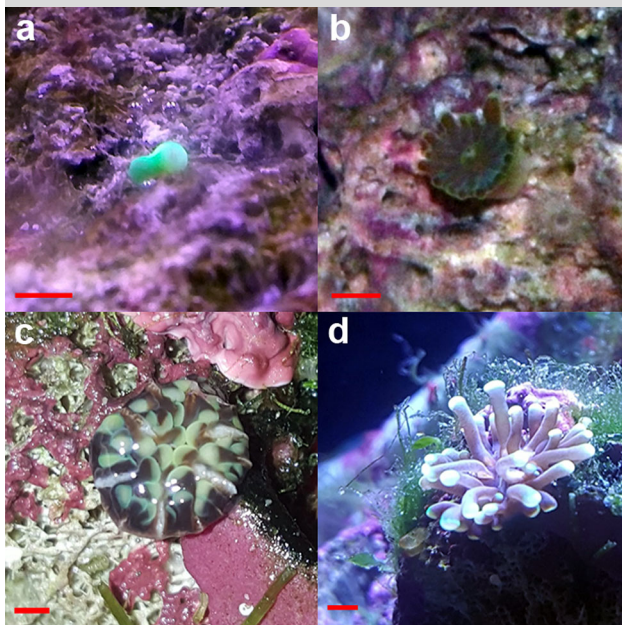


## Tentacular autotomy and polyp regeneration in the scleractinian coral *Euphyllia glabrescens*

Scleractinians reproduce asexually via a variety of mechanisms, including fragmentation, budding, planulae production, polyp expulsion and bailout (Piraino et al. 2004). More recently, autotomy has been documented as another means of asexual reproduction (Hoeksema and Waheed 2012); this mechanism involves skeletal dissolution and is limited to solitary fungiids. Here, we report an observation of tentacular autotomy and polyp regeneration in the coral *Euphyllia glabrescens* (Chamisso and Eysenhardt, 1821).

In February 2015, a colony of *E. glabrescens* (10 cm length) purchased from a commercial aquarium underwent tentacular autotomy immediately after relocation to an aquarium tank. The autotomized tentacle was non-motile and its knob-like tip subsequently attached to a piece of live rock (Fig. 1a). Three days later, a primary polyp (~2 mm diameter) without tentacles formed. After 1 month, distinct tentacles measuring ~1 mm length developed around the polyp's mouth (Fig. 1b). By July 2015, septa were clearly visible on the coral which had grown to a size of 6 mm diameter (Fig. 1c, d). A

separate but similar incident was also observed from the same colony in May 2015.



**Fig. 1** Tentacular autotomy and regeneration in *Euphyllia glabrescens*. **a** Autotomized tentacle on live rock. **b** Month-old primary polyp. **c, d** Five-month-old polyp with developed skeleton and extended tentacles. Scale bars 1 mm

Tentacular autotomy and polyp regeneration have been reported in actinians and alcyonareans and can occur as a response to predation (Piraino et al. 2004), but is as yet undocumented in scleractinians. As autotomy occurred after the parent *E. glabrescens* colony was mechanically agitated, we inferred that the behavior was a stress-induced response. This strategy may be used by some colonial scleractinians as a means of asexual reproduction and could potentially be developed as a propagation technique for reef restoration. Future investigations should focus on examining the likelihood of this phenomenon in natural populations.

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