Single polyp *Acropora* recruit resists overgrowth by the pervasive macroalgae *Lobophora*

Fig. 1 **a** Competitive interaction between the *Acropora* recruit resisting *Lobophora* overgrowth, and close-ups of the recruit **b** surrounded by the thallus and **c** after thallus removal

Due to the minute size of newly settled corals, overgrowth by competitors is one of the dominant causes of post-settlement mortality, and the pervasive brown macroalgae *Lobophora* is a common competitor. Due to its often encrusting growth form and allelopathic toxicity, *Lobophora* is known to reduce coral recruitment (Doropoulos et al. 2017) as well as juvenile coral growth and survival (Box and Mumby 2007). Given these known effects, it was surprising to observe a recently settled *Acropora* recruit that had resisted overgrowth by the thallus of an encrusting *Lobophora* (Fig. 1).

The *Acropora* recruit was a single polyp individual approximately 4 weeks in age, measuring 1.5 mm in diameter with a fully developed skeleton. It was located on the underside of a settlement tile being used to quantify coral recovery in north-west Australia. Most striking was the nature of the competitive interaction. The thallus of the *Lobophora* had formed a hole that completely surrounded the *Acropora* (Fig. 1a, b), yet both appeared healthy with no signs of degradation on either the algal thallus or the coral skeleton. The growth form of the recruit was somewhat tubular, elongating much more in height (Fig. 1c) than single polyp *Acropora* recruits of similar diameter (pers. obs.). This elongated growth form and raised rim of the recruit are likely a response to direct competition with the expanding *Lobophora* thallus. Potentially, the recruit also used its mesenterial filaments to combat the algae as it grew over the top, resulting in the circular hole in the algal tissue. Adult *Acropora* have been observed to use their mesenterial filaments to sweep detritus and turf to create space for growth (Roff et al. 2009). While this observation demonstrates that newly settled coral recruits have the capacity to compete with and resist algal overgrowth, it is likely an exception rather than a rule.

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