Case We present a male teenager with a background of severe eczema since infancy, multiple food allergies and seasonal allergic rhinoconjunctivitis since early childhood. Systemic immunosuppressants including ciclosporin and methotrexate had failed to control his severe eczema. At the age of 15 years he developed dysphagia associated with difficulty swallowing food. He had no bolus obstruction or vomiting but did experience nausea. He was already on a PPI for suspected gastro-oesophageal reflux. An upper GI endoscopy with biopsies at multiple levels revealed a concentric ring appearance in the mid oesophagus. The histology showed >30 eosinophils per high power field; both the macroscopic and microscopic findings were consistent with a diagnosis of eosinophilic oesophagitis (EoE). He was initially treated with oral budesonide but showed no resolution of his EoE.

He then received an exclusive elemental diet for 10 weeks but still showed no resolution of his EoE.

A multidisciplinary decision with the dermatologists and gastroenterologists was made to stop his methotrexate and elemental diet and to treat with Dupilumab as a single agent, primarily to treat his severe eczema. After 12 months of treatment his eczema had almost completely resolved and his dysphagia was markedly improved. A repeat upper GI endoscopy showed 3–4 eosinophils per high power field, in keeping with adequately treated EoE.

Discussion EoE is a condition strongly associated with food allergies and atopy. Its diagnosis requires the presence of symptoms (including persistent dysphagia, food impaction or GORD that fails to respond to treatment), histological findings of >15 eosinophils per high power field in at least 1 biopsy and the exclusion of other causes. The incidence appears to be increasing with males in their 3rd and 4th decade being most commonly affected.

ESPGHAN have designed an algorithm for the recommended treatment for EoE in children and young people. They recommend the use of either topical steroids or an exclusion/elemental diet. If one of these proves ineffective they advise trying the other modality.

EoE is thought to be mediated primarily by food allergies triggering type 2 helper T cell activity, resulting in release of IL 4, IL 5 and IL 13 cytokines. Dupilumab is a monoclonal antibody which inhibits IL4 and IL13 signalling and has been shown to be effective in control of atopic eczema.

A recent randomized controlled trial (RCT) in adults has shown significant improvement in symptoms and endoscopic features of EoE with Dupilumab versus placebo. A phase 3 double-blind RCT evaluating efficacy and safety of Dupilumab vs placebo for EoE in adolescents and adults is ongoing.

Conclusion This is the first paediatric case report of Dupilumab being successfully used to treat both EoE and stubborn eczema which had failed to respond to other immunosuppressants. This was a very complex case due to the extensive atopy since infancy and the need to go beyond the current guidelines to treat his EoE.