



Case Study: Baby J

Use of Neocate Syneo in a food allergic infant

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Background / Summary

Baby J was referred at 7 months of age for dietetic assessment and management of his multiple food allergies (IgE and non-IgE mediated), eosinophilic oesophagitis and growth concerns.

There is a family history of atopy and he was born by emergency caesarean section at term. He was given antibiotics at birth for 5 days due to maternal pyrexia. Maternal antibiotics were also administered; all of which are factors which potentially affected his and his mother's microbiome.

Baby J was discharged home on day two on exclusive breastfeeds. He continued to be exclusively breastfed until solids were introduced around 6 months of age. He was happy, well and content for the first few months of life, without any growth concerns.

Baby J developed widespread eczema at 2 months, which failed to respond to regular emollient usage and 1% Hydrocortisone. Mum removed milk and soya from her own diet due to concerns these foods were making his skin worse and because her older child had non-IgE mediated CMA manifesting in eczema as an infant and therefore had previously followed an elimination diet herself.

The eczema improved, however remained problematic and at 4 months he was seen by a Consultant Allergist, who recommended regular emollient application, Daktacort on the face and neck and Eumovate on the body, alongside continued maternal exclusion of milk and a soya free diet.

Once the eczema was well controlled a trial reintroduction of milk and/or soya back into Mum's diet was recommended to assess tolerance.

Symptoms of vomiting, food refusal and poor growth began after solids were introduced and coincided with the introduction of soya around 6 months of age.

Clinical Presentation

Problems:

- **Eosinophilic Oesophagitis** (on six-food-elimination diet, as recommended by Paediatric Gastroenterologist)
- **Gastrointestinal** (food allergy)
- **Atopic Eczema**
- **IgE mediated wheat and lentil allergy**
- **Sensitised to peanut, sesame and multiple tree nuts**

Solids were introduced around 6 months and he was weaned onto a milk and soya free diet. When solids were introduced Baby J experienced constipation, passing hard dry stools, every 2-3 days with straining and discomfort. Around this time Mum removed egg from her own diet in addition due to concerns that egg was worsening these symptoms, which seemed to help Baby J's bowel opening.

Once he was established on two meals and a variety of foods, mum trialed a 3-day introduction of soya formula to Baby J. This resulted in a sudden onset of forceful, blood stained vomiting and a single episode of frank haematemesis, following which Baby J was admitted to hospital. Blood tests revealed a haemoglobin drop, significant eosinophilia and raised white cell count.

Baby J underwent an ultrasound, which was normal and was discharged home following initiation of Omeprazole (20mg BD).

He remained symptomatic with regular vomiting after meals and breastfeeds and was beginning to show signs of food refusal. He was therefore seen by a Paediatric Gastroenterologist who conducted an upper GI endoscopy, which revealed significant inflammation, limited largely to the oesophagus with greater than 70 eosinophils per high power field, following which he was diagnosed with Eosinophilic Oesophagitis (EoE). He was started on a six-food elimination diet (avoiding milk, egg, soy, wheat, nuts and shellfish) and Budesonide 0.5 mg od. He also underwent skin prick testing which showed marked sensitisation to multiple foods (see Table 1 for more details).

Management

Dietetic assessment:

Baby J was initially referred to a Dietitian at 7 ½ months of age following his diagnosis of EoE and multiple food allergies. At the time he was breastfed on demand (with Mum avoiding cow's milk, soya and egg and taking a calcium and vitamin D supplement) and taking expressed breast milk (EBM) from a bottle. He had just started on Budesonide and a six-food elimination diet but remained uncomfortable. The vomiting after meals had improved but he continued to vomit intermittently (often twice daily) and was exhibiting signs of feeding aversion. He had previously accepted a variety of textures (puree, lumpy and finger foods), however following the onset of regular vomiting, he had become fussy at meals times, preferring small smooth purees and sweeter foods and refusing all lumpy, textured and finger foods. He was taking a multivitamin supplement daily.

He drank 2-3 bottles of EBM daily (drinking 100-150ml which had fallen from 180 - 200ml at a time). Mum was keen to introduce formula in addition to breastfeeding, as she had returned to work and was finding it hard to express enough breast milk, she explained that she was also finding the milk, soya and egg free diet difficult to follow.

Growth:

On initial assessment Baby J's weight had fallen from the 50th centile (before 6 months and the onset of symptoms) to the 9th-25th centile and his length falling from 50th to 25th centile. See Table 2 and growth chart for further details. His recent blood tests revealed that his haemoglobin, ferritin and iron levels were all now within the normal range.

Aims of nutritional intervention:

- Ensure adequate oral intake for Baby J to support development and catch up growth.
- Aid symptom control through adherence to a milk, soya, egg, wheat, shellfish, peanut, tree nut, sesame and lentil free diet.
- Support Mum with milk, soya and egg free diet whilst breastfeeding, ensuring adequate macro- and micronutrient intake.
- Support parents with the introduction of hypoallergenic formula alongside breastfeeding.
- Support Mum regarding practical advice to aid food behaviours.

Dietetic management plan:

- Prescription of Neocate Syneo following Mum's request to introduce formula in addition to breastfeeds.

Rationale: In accordance with DRACMA, BSACI, ESPGHAN and iMAP guidelines an amino-acid formula was used rather than extensively hydrolysed formula due to his diagnosis of EoE. Neocate Syneo was chosen over other amino-acid formulas as Mum expressed a desire to use probiotics and considering the multiple factors for Baby J which may have had a negative impact on the microbiome this was the most suitable formula.

Potential factors to consider: Introducing hypoallergenic formula at this age can be challenging due to the taste of these formulas

- Dietetic counselling was provided on the introduction of the formula (e.g. Neocate Syneo can be mixed with EBM and must then be used straight away), formula preparation, storage and potential short-term side effects.
- Advice regarding allergen avoidance for Mum and baby and support regarding food refusal was provided.

Dietetic Review

A review at 9 months of age revealed that his vomiting had stopped. He was taking 500ml Neocate Syneo daily providing 61ml/kg, 42kcal/kg and 1.2g protein/kg in addition to breastfeeds on demand which were predominately overnight. He had started accepting and enjoying a variety of foods however textures remained an issue. His weight had increased towards the 25th centile and his length remained on the 50th centile.

Mum explained that she had introduced the Neocate Syneo as recommended over a gradual period of 2 weeks (initially offering 25ml (25%) Neocate Syneo and 75ml EBM (75%) for 3-4 days then moving on to 50%/50%, 75%/25%, she noticed a slight increase in abdominal distension and flatulence however this improved after one week. No other side effects were noted.

Discussion

- This case highlights the successful introduction of Neocate Syneo in to the diet of a 7 month old infant with a complex presentation with EoE, multiple food allergies and growth concerns. The advice and support of the Dietitian is paramount in complex cases such as these and vital to assist parents with the introduction of hypoallergenic formulas at this age.
- Neocate Syneo, which contains synbiotics, was recommended over other amino-acid formulas due to the potential benefits of the addition of pre- and probiotics considering the multiple factors that may have negatively impacted on Baby J's microbiome and due to mum's interest in probiotics.

Conclusion:

- Neocate Syneo was successfully introduced into the diet of this 7 month old infant and was tolerated.

Product Usage

- ☒ ORAL NUTRITIONAL SUPPLEMENT
- ☐ TUBE FEED
- ☐ SOLE SOURCE OF NUTRITION
- ☒ SUPPLEMENT TO AN ELIMINATION DIET

CALORIE DENSITY: 0.68 KCAL/ML
(STANDARD CONCENTRATION)

Patient Profile

- ☐ ANAPHYLAXIS
- ☒ ATOPIC DERMATITIS (AD)
- ☒ FALTERING GROWTH
- ☒ MULTIPLE FOOD ALLERGIES (MFA)
- ☒ GI SYMPTOMS
- ☒ SYMPTOMATIC ON BREAST MILK
- ☐ SYMPTOMATIC ON AN EHF

Table 1. Skin Prick Test Results for Baby J

Food	Skin Prick Test Result (mm)
Cow's Milk (fresh)	22
Egg	0
Soya	0
Wheat	5
Sesame	7
Peanut	5
Almond	5
Cashew	0
Walnut	0
Hazelnut	3
Lentil	10

Figure1. Growth Charts for Baby J

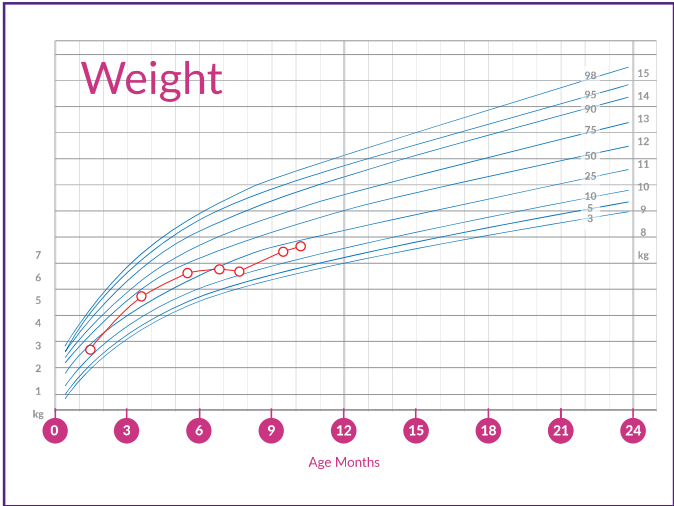
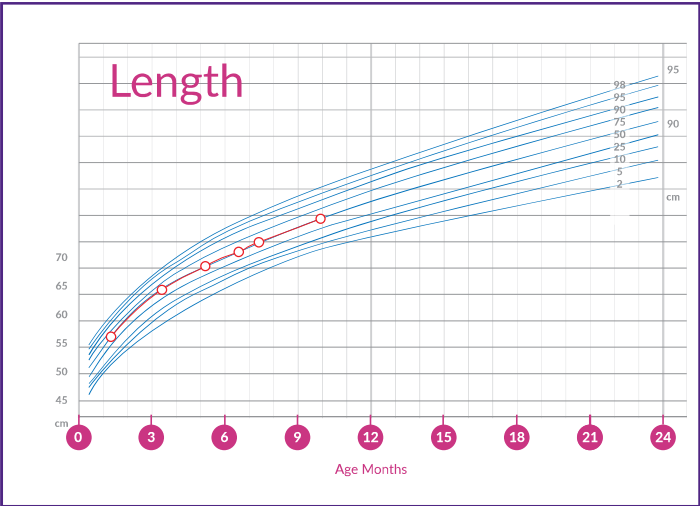


Table 2. Growth Table for Baby J

Age	Weight (kg)	Centile	Height (cm)	Centile
1 month	4.5	50th	54.8	50th
3 months, 5 days	6.45	50th	62.4	50th - 57th
5 months, 2 days	7.36	25th - 50th	65.9	50th
6 months, 14 days	7.5	25th	67.9	25th - 50th
7 months, 7 days	7.44	9th - 25th	69.5	50th
9 months, 5 days	8.16	9th -25th	-	-
9 months, 27 days	8.46	25th	73.2	50th

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