INTRODUCTION

Growth monitoring in infants is a simple measure of health. However, the interpretation can sometimes be oversimplified. Back in 1986, WHO stated that growth curves that cross downward centile lines reflect failure to thrive, indicating the need for supplementation. When such concept is applied to breast fed babies, they might be given supplemental formula unnecessarily because such crossing in the first year can be physiological and had been reported in healthy formula fed babies.

This case series aims to review the records of a convenience sample of babies who had been exclusively breast fed for 6 months and continued breastfeeding up to at least 12m and see how often they have observed such a downward crossing of centile lines. Most of the studied mothers held a strong belief that breast milk is the best and no supplemental formula milk had been introduced. This sample thus represented a group of infants fed on demand potentially reflecting more natural growth.

SUBJECTS & METHODS

This is a retrospective review of the growth records of infants who were breast- fed for at least one year, seen at a clinic and from a breast- feeding mothers support group. All of them had solids introduced at around 6 m. Those with regular weight measurement from birth to one year and marked on the Hong Kong growth reference curves with the seven centile lines (3, 10, 25, 50, 75, 90, 97), plotted in a semi-log scale showing weight (WT) and length (LG) in the same diagram were used for analysis. Physiological weight loss in the first week was ignored (not shown in the growth record). The number of babies whose weight showed a crossing centile lines within the three time- intervals: birth-4m, 4-8m and 8-12 m were estimated.

RESULTS

A total of 38 infants -18 boys and 20 girls were reviewed. Crossing upward centile in weight for at least one centile line was common from birth to 4 m (n= 16, 43%) while crossing downward at least one centile line was common from 4 to 8 m (n=15, 40%). Most of them settled before 12 m to grow along a centile line, usually the same as that of length.

Five patterns for weight growth from birth to 12 m were recognized. Typical cases are shown for illustration:

1. Within 1 centile line difference (n=14, 37%)

2. Upward followed by downward crossing centiles, then settled before 12m (n=12, 32%)

3. Staying at same centile followed by downward crossing centile, then settled before 12m (n=7, 18%)

4. Downward than upward crossing centiles (n=3, 8%)

5. Upward crossing centiles (n=3, 8%)

Fig. 1 Baby Lou
BW 2.89 kg [Doubled at 3m]
0-4m Cross 1 centile line from 25th to 50th
12m WT and LG at 50th centile

Fig. 2 Baby Wong
At 1.5m WT and LG at same centile
12 -23m WT stay at the same centile

Fig. 3 Baby Ngai
BW 3.46 kg [Doubled at 4m]
4 -8m Cross -2 centile line
At 12-18m WT and LG at 10th centile
Mother had GDM, gained 21 kg during pregnancy

Fig. 4 Baby Li
BW 3.32 kg [Doubled at 2m]
LG remained at around 50th centile

Conclusion

In this convenience sample of mothers committed to exclusive breastfeeding during the first 6 months, it was relatively common to see a downward crossing of centiles around 4-6 m, which was unlikely to be due to insufficient breast milk production. These babies should not be diagnosed as failure to thrive and no supplemental formula was required. However, if downward crossing centile occurred in the first month unexplained by the physiological weight loss (in the first few days), then failure to thrive due to inadequate breast milk should be suspected and the technique of breast feeding should be corrected with a close follow up.

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