

Indications for the operation have been extended to include vasomotor rhinitis of various causes, allergic rhinitis, senile rhinorrhoea, chronic epiphora, crocodile tears, recurrent nasal polyposis and certain neurovascular neuralgias.

## Conclusion

Transnasal vidian neurectomy is a safe, effective means of controlling symptoms of chronic rhinorrhoea, crocodile tears, epiphora and chronic nasal polyposis; it has obvious advantages over alternative approaches and offers hope to those patients in whom medication has failed.

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# Antenatal detection of small-for-gestational-age babies

## Choice of a symphysis-fundus growth curve

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### Summary

By using symphysis-fundus measurements serially and plotting them on a curve, small-for-gestational-age babies can be detected. To determine which symphysis-fundus curve to choose for our population, the predictive values of three of the commonly used of these growth curves were compared using serial measurements obtained from 97 low-risk obstetric patients with accurate gestational ages. The curves of Calvert and Quaranta had the best sensitivities of 92,9% each compared with Belizan's (85,7%). However, the specificity of Calvert's and Quaranta's curves were poorer being 74,7% and 50,6% compared with 89,2% for Belizan. The positive predictive value for the curves were Belizan 57,1%, Calvert 38,2% and Quaranta 24,1%. The results indicate that for a Third-World urban population Belizan's curve is most suitable.

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The use of symphysis-fundus (S-F) measurements for the detection of small-for-gestational-age (SGA) babies requires only a tape measure and training, and thus is an ideal method to use in screening a low-risk obstetric population. Various S-F growth curves have been drawn up<sup>1-3</sup> and a decision on

which curve to use for a specific population can be confusing. To be effective, the S-F growth curve should give a high positive predictive value, i.e. a high likelihood of an SGA baby if the S-F curve is abnormally low. If one selects a curve not suited to the population a low pick-up rate for SGA babies (i.e. poor sensitivity) or a too high pick-up rate of normal babies thought to be SGA (i.e. poor specificity) could result, devaluing the potential of S-F measurements. Ideally, an original S-F curve should be established for the population being dealt with but to formulate a stable curve requires data from thousands of patients and is beyond the scope of most hospitals. No such curve has been established in South Africa.

A study was undertaken to select which one of the curves at present available was best suited to our mainly Third-World urban population. The method used can be easily applied to any population.

### Patients and methods

Ninety-seven low-risk coloured obstetric patients were randomly selected from patients that booked early at the Bishop Lavis Mobile Obstetric Unit (MOU). These patients were followed-up antenatally by 2 specially trained midwives every 4 weeks until 28 weeks, every second week until 36 weeks and then weekly until labour commenced. At each visit the S-F measurement was taken and recorded but not plotted on a curve. All patients booked by 22 weeks' gestation and had an ultrasonographic examination to confirm gestational age. If there was a difference between dates and extrapolation of the biparietal diameter (BPD) reading > 2 weeks' gestation, the BPD was used to estimate gestational age.

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TABLE I. COMPARISON OF SYMPHYSIS-FUNDUS GROWTH CURVES

	TP	FP	TN	FN	Sensitivity (%)	Specificity (%)	Positive predictive value (%)	Negative predictive value (%)
					TP/(TP + FN)	TN/(TN + FP)	TP/(TP + FP)	TN/(TN + FN)
Belizan <i>et al.</i> <sup>1</sup>	12	9	74	2	85,7	89,2	57,1	97,4
Quaranta <i>et al.</i> <sup>3</sup>	13	41	42	1	92,9	50,6	24,1	97,7
Calvert <i>et al.</i> <sup>2</sup>	13	21	62	1	92,9	74,7	38,2	98,4

TP = true-positive; FP = false-positive; TN = true-negative; FN = false-negative.

After birth the diagnosis of SGA was made if the birth weight for gestational age was below the 10th percentile according to the growth chart of Jaroszewicz *et al.*<sup>4</sup> The S-F measurements were then plotted on three growth curves: Belizan *et al.*<sup>1</sup>, Quaranta *et al.*<sup>3</sup> and Calvert *et al.*<sup>2</sup> The criteria used to identify an SGA baby by the S-F curve were: 2 consecutive readings or 3 individual readings below the 10th percentile after 20 weeks' gestation or 3 consecutive readings the same or less than the previous one before 38 weeks' gestation.

## Results

There were 38 primigravidas and 59 multigravidas in the study group. The average mass of the primigravidas' babies was  $3034 \pm 464$  g and of the multigravidas  $3048 \pm 515$  g. There were 14 SGA babies. Other complications included 9 patients with pregnancy-induced hypertension, 8 patients with preterm labour, 2 with abruptio placentae, 1 placenta praevia and 2 caesarean sections for cephalopelvic disproportion. The sensitivity, specificity and positive and negative predictive values<sup>5</sup> were calculated for each curve (Table I). The curves of Calvert *et al.*<sup>2</sup> and Quaranta *et al.*<sup>3</sup> each had a sensitivity of 92,9% and specificities of 74,7% and 50,6% respectively. The curve of Belizan *et al.*<sup>1</sup> had a sensitivity of 85,7% and specificity of 89,2%. The positive predictive value for the curves were: Belizan *et al.* 57,1%, Calvert *et al.* 38,2% and Quaranta *et al.* 24,1%.

## Discussion

From this study it is clear that the Belizan *et al.*<sup>1</sup> curve gave the best predictive value for our population. Although both

the Calvert *et al.*<sup>2</sup> and Quaranta *et al.*<sup>3</sup> curves gave a higher sensitivity, i.e. higher proportion of SGA babies giving an abnormal S-F curve, they both had much lower specificities (i.e. higher proportion of normal babies giving an abnormal S-F curve). Consequently for our Third-World urban population the Belizan *et al.*<sup>1</sup> curve is most suitable because it detects most SGA babies without falsely labelling too many appropriate-for-gestational-age babies as SGA.

The method used in this study is simple and can be easily applied to any population to select the best curve. Alternatively, for those not able to perform a similar study, the Belizan *et al.*<sup>1</sup> curve would be a reasonable choice for a Third-World urban population.

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