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## Parathyroid Adenoma

Primary hyperparathyroidism (PHPT) is associated with either an adenoma or hyperplasia of chief cells of the parathyroid gland. It may occur sporadically, as a single autosomal dominant familial disorder, or as a part of the autosomal dominantly transmitted complex of multiple endocrine neoplasia (MEN). PHPT is relatively rare in children and adolescents(1,2). Patients of PHPT in India are comparatively young and they suffer from overt skeletal and renal manifestations.

A 12-year-old boy presented with a pain in abdomen, decreased appetite, and constipation for three months and severe nausea and vomiting since eight days. Physical examination of the child was unremarkable. Investigations revealed: blood urea 34 mg/dL, creatinine of 1.5 mg/dL, serum calcium level was 19.5 mg/dL, phosphorus 3.2 mg/dL, and serum alkaline phosphatase 563 IU/L. Parathyroid hormone levels were 380.0 pg/mL (12-72 pg/mL). USG abdomen showed small renal calculi in left kidney. Bone changes of hyperparathyroidism were not seen. CT neck showed a well-circumscribed enhancing lesion 1 cm × 0.9 cm at the level of the thyroid lobe suggestive of parathyroid adenoma. Parathyroid scintigraphy with technetium-99m-MIBI showed evidence of tracer activity in the region of upper pole of

left lobe of thyroid confirming parathyroid adenoma in that region. Patient subsequently underwent surgery.

PHPT most often associated with parathyroid adenoma(3,4). Clinical manifestation of hypercalcemia includes muscular weakness, anorexia, nausea, vomiting, constipation, polydipsia, polyuria, loss of weight and renal calculi. Osseous changes may include pain in back or extremities, fractures and decrease in height due to compression of vertebra. Surgical removal is recommended. Prognosis is good if the disease is recognized and treated early. When extensive osseous lesions are present, deformities may be permanent(3).

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## Use of Thermospot by Slum Dwelling Mothers

Thermospot is a cheap liquid crystal thermometer. We assessed its impact on neonatal care when used by mothers in an inner-city slum (Sunder Nagri, Delhi) in winter (January and February 2005).

All home deliveries under the care of the Community Health Department, St Stephen's Hospital were included. Exclusion criteria were hospitalisation and parental refusal. The Hospital Ethics Committee approved the study.

Thermospot was stuck to the infant's abdomen over the liver and the mother taught how to interpret it. Mothers were counseled on the importance of keeping the baby warm and told how to do so. If the device came unstuck it was reapplied with transparent tape. The site was inspected for skin damage or irritation. The thermospot was removed on day 7. Information from mothers on acceptability, the number of episodes noticed and subsequent actions taken was obtained using a questionnaire in Hindi.

Thirty-two infants were recruited. Five were lost to contact (moved to village). None of the mothers found the device unacceptable or removed it. There were no cases of skin damage or irritation. It came unstuck and had to be re-applied in 4 cases. In each case only

one re-application was necessary.

Thirteen out of the 27 mothers noticed a colour change. Of these mothers, the average number of episodes of colour change was 4.4.

Eight of the thirteen mothers who noticed a colour change reacted. In all cases the action taken was correct (*e.g.*, covered the child, clothed the child, closed doors and windows, warmed the room, put the child in mother's lap, lit fire in the room, put curtain on door to stop draught).

When asked to judge thermospot as "good", "okay" or "useless", all mothers judged it to be either "good" or "OK". The percentage that thought it was "good" was 70%, 60% and 25% respectively of those who saw a colour change and reacted to it, those who saw a color change but did not react and those who did not see a color change.

Thermospot performance when used by non-medically-trained local volunteers in this same group of infants had been assessed in a parallel study(1) and its negative and positive predictive values had been 99% (making false reassurance unlikely) and 58% respectively. We can therefore calculate that during the first week of life thermospot use by mothers led to  $0.76 (13/27 \times 4.4 \times 0.58 \times 8/13)$  helpful interventions per infant.

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