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BACKGROUND

Thyrotoxicosis in neonates is a life-threatening condition that can be associated with lasting neurologic problems.

Most cases are seen in neonates born to mothers with Graves' disease in which thyroid stimulating immunoglobulin (TSI) is transferred to the foetus and results in hyperthyroidism.

Hypothyroidism due to topical iodine use has been reported in neonates, but thyrotoxicosis has never been described in this age, while in adults is a known entity.

We hereby describe a first case of topical iodine induced thyrotoxicosis in a new-born with giant omphalocele.

CASE PRESENTATION

A female baby born at 34 weeks of gestation with multiple congenital abnormalities, including a giant omphalocele, persistent ductus arteriosus and thoracolumbar scoliosis.

In preparation for surgery, omphalocele was covered with daily topical povidone iodine dressings. On 3rd day of life, evaluation of thyroid revealed suppressed thyrotropin (TSH) at 0.59 μ IU/ml (NL 0.73-4.60 μ IU/ml) and elevated free thyroxine (FT4) at 5.63 ng/dl (NL 0.58-1.64ng/dl) that subsequently lead to symptomatic hyperthyroidism with hyper dynamic state resulting in tachycardia and hypertension.

Maternal history was negative for thyroid disease and thyroid stimulating antibodies were negative. Therefore we presumed that hyperthyroidism was secondary to povidone iodine dressings. On day of life five, the povidone iodine dressing were changed to silver sulfadiazine (iodine free) dressing, and propranolol 0.01mg/kg/dose was started to treat hypertension and tachycardia. Serial daily thyroid function tests were monitored. Thyroid status gradually improved with complete resolution in 8 days after removal of iodine containing dressing (FT4 1.26 ng/dl, TSH 2.21 MCIU/ml and FT3 2.34pg/ml). Propranolol was discontinued.

CONCLUSIONS

Hypothyroidism due to topical iodine use in omphalocele has been described in newborns.

NOVEL INSIGHT: To our knowledge, this is the first case of topical iodine induced neonatal thyrotoxicosis. This case demonstrates the critical need to monitor thyroid status in new-borns treated with topical iodine, in order to identify thyroid abnormalities and to consider methods of treatment.

REFERENCES:

- Whitehouse JS, Gourlay DM, Masonbrink AR, Aiken JJ, Calkins CM, Sato TT, et al. Conservative management of giant omphalocele with topical povidone-iodine and its effect on thyroid function. Journal of pediatric surgery. 2010;45(6):1192-7.
- Cosman BC, Schullinger JN, Bell JJ, Regan JA. Hypothyroidism caused by topical povidone-iodine in a newborn with omphalocele. Journal of pediatric surgery. 1988;23(4):356-8.

