

# **SACROCOCCYGEAL TERATOMA – from prenatal risk factors to functional outcome, quality of life and genetic deviations**

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PhD half time seminar

Time: 14.00-16.00, 26th of September 2017

Place: BMC, room I 1341

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## **Background**

During the past decade the birth prevalence of sacrococcygeal teratoma (SCT) has been relatively high in Southern Sweden. The peak in incidence has raised several questions regarding mortality, morbidity and pathological background.

## **Aim**

The overall aim of the thesis was to evaluate:

- risk factors of poor neonatal outcome
- prevalence of urinary tract and bowel dysfunction compared to healthy children
- risk factors of poor functional outcome
- prevalence of problems concerning scar
- quality of life at long term follow-up
- genetic deviations and their contribution to the phenotypical diversity

## **Methods**

The first study was a retrospective cohort study of all newborns with SCT during 2000-2013. Data regarding prenatal growth, prenatal morbidity, tumor characteristics at birth and neonatal course were retrieved. Predictors of adverse neonatal outcome were analysed. The second study was a cross-sectional follow-up study of the cohort. Urinary tract and bowel function was measured through interviews, and data was compared to healthy children. Predictors of poor function was analysed.

## **Results**

The overall birth prevalence of SCT was approximately 1:14.000 during the study period, and the mortality rate was 11%. Fetuses with rapidly growing tumors, large tumor diameter early in pregnancy, polyhydramnios and solid morphology were more likely to develop a complicated neonatal and perioperative course. At long term follow-up (median 7.3 years) 29% had urinary tract dysfunction, 47% had constipation and 29% problems with soiling. Voluntary bowel movements were reported by 88% of the cohort. Compared to healthy controls, children with SCT more commonly had uncontrolled voiding, bladder emptying

difficulty, pyelonephritis and constipation. The overall Bowel Function Score (BFS) was equal in the two groups. Children with large tumors and immature histology were more likely to develop urinary tract and bowel dysfunction

## **Conclusion**

Intrauterine growth pattern, tumor size and immature histology seem to be important risk factors for both short and long term morbidity. The most rapidly growing tumors encompass a high prevalence of polyhydramnios and premature birth, which increases the risk of an adverse neonatal outcome. In the long perspective, urinary tract and bowel dysfunction are found in approximately one third of the patients.

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## **Papers**

**Sacrococcygeal teratoma: A population-based study of incidence and prenatal prognostic factors.** Hambræus M, Arnbjörnsson E, Börjesson A, Salvesen K, Hagander L. *Journal of Pediatric Surgery*, 51(3), 481-485, 2016.

**Long term outcome of sacrococcygeal teratoma: a controlled cohort study of urinary tract and bowel dysfunction and predictors of poor outcome.** Hambræus M, Arnbjörnsson E, Stenström P, Hagander L, Börjesson A. *In script*.