Influence of Chemotherapy Anticancer Agents on Formation of Deciduous Teeth with Neuroblastoma Observed by Absence of Teeth

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Abstract: It has been reported that chemotherapy influences tooth abnormalities in children with neuroblastoma. This study examined the influence of anticancer agents on the formation of deciduous teeth, and the relationship between the absence of teeth and the period of chemotherapy.

The case was a female infant, who underwent excision of an abdominal tumor at 11 months old and was diagnosed as having progressive neuroblastoma (stage 1). After operation, the neuroblastoma was treated with chemotherapy for 4 months (from 1 year and 1 month old to 1 year and 4 months old) in the pediatric department of a university hospital, Kyoto Prefectural University of Medicine. At 3 years and 7 months old and 6 years and 5 months old, we performed oral and orthopantomography examination and analyzed deciduous teeth for whether anticancer agents containing platinum influence the formation of deciduous teeth using electron probe micro analysis (EPMA).

As a result, the absence of teeth was detected in the first and second premolars. The period of embryonic formation and calcification of teeth coincided with the period of chemotherapy. Deciduous teeth showed no morphologic change and there were no teeth whose enamel and dentin clearly contained platinum.

These results suggest that chemotherapy has an influence when teeth are immature but not when teeth are mature.

Key words: Chemotherapy, Neuroblastoma, Deciduous tooth