

Avoidable Thiamazole-induced Omphalomesenteric Duct Remnants -20-Year Retrospective Study in Our Hospital-

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Take Home Message

We should **not** administer thiamazole to women of **childbearing** age.

Background

- > **thiamazole (MMI)**
 - 1st-line treatment for Graves' disease
 - teratogenic effects
- > **MMI-related anomalies**
 - **omphalomesenteric duct remnants**
 - **omphalocele**
 - **esophageal atresia**
 - choanal atresia
 - aplasia cutis congenita etc...

> **A Study about the teratogenic effect of MMI**
Yoshihara, et al. J Clin Endocrinol Metab. 2012 Jul;97(7):2396-403

Subject : **6,941 women with Graves' disease**

	MMI exposure (+)	MMI exposure (-)
ODR *	7	0
omphalocele	6	0
esophageal atresia	1	0
Total (live birth)	1,231	1,906

* ODR: omphalomesenteric duct remnants

Inevitably, there is a constant limitation on sample size when dealing with infrequent surgical anomalies

This is a **common difficulty** when attempting to clarify whether there is any association between infrequent surgical anomalies and MMI exposure **using data derived from women with Graves' disease**

<study method>

- ✗ **pregnant women with Graves' disease**
 - ➔ MMI exposure YES or NO ?
- **patients with infrequent surgical anomalies**
 - ➔ MMI exposure YES or NO ?
- > **characteristics of our hospital**
 - a specialized children's facility
 - database of all surgical cases

We could review the incidence of **infrequent** MMI-related surgical anomalies.

There have been **no comparable studies** on this subject using **the same design**.

Objectives

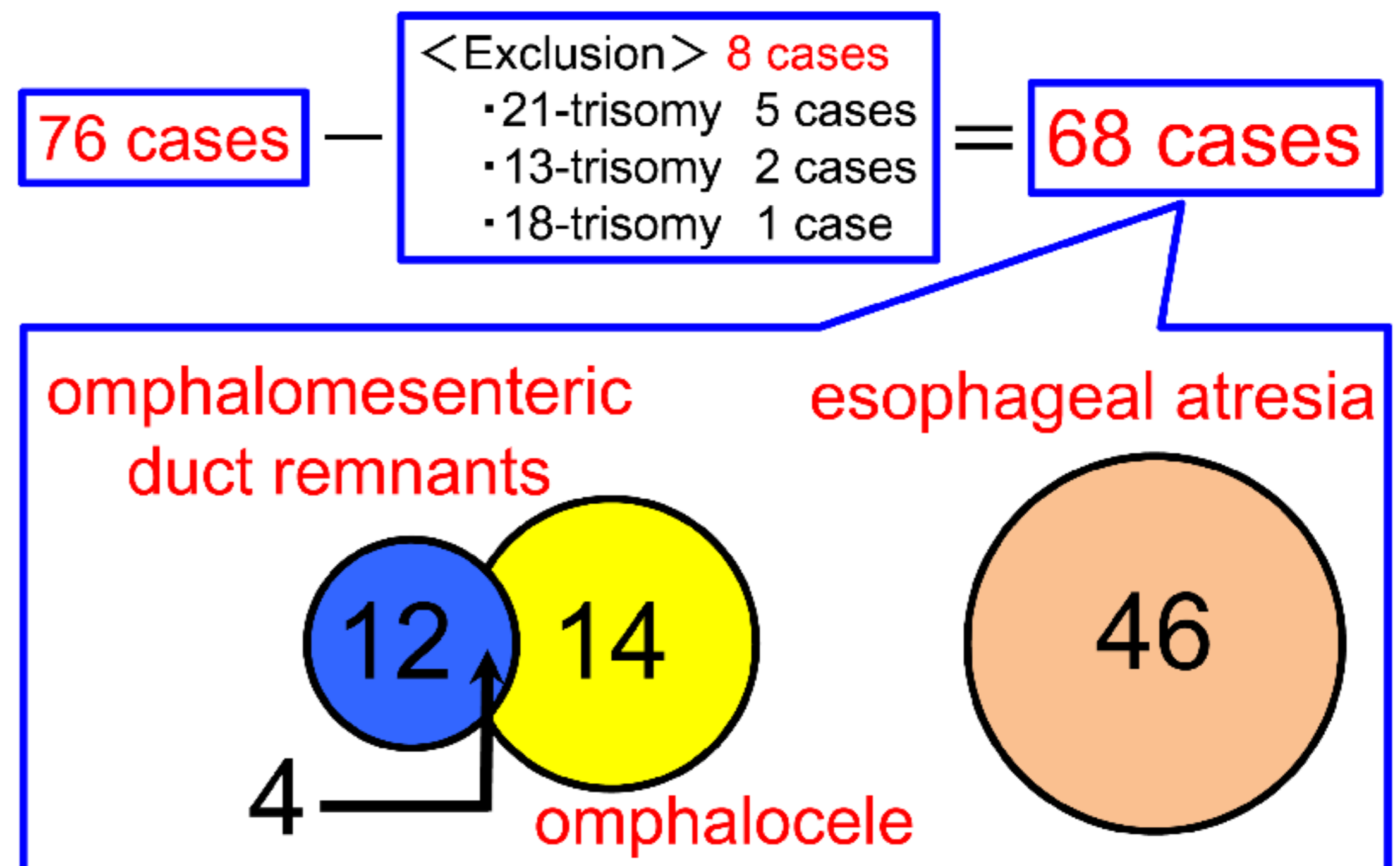
To elucidate an association between MMI exposure during pregnancy and major MMI-related surgical anomalies

Subject & Method

< Subject >
76 cases in Kiyose Children's Hospital who underwent surgery for **omphalomesenteric duct remnants**, **omphalocele**, or **esophageal atresia** over a 20-year period from 1991 to 2010

< Method >
Based on medical records, we investigated whether **exposure to MMI** during pregnancy was associated with **these three MMI-related surgical anomalies**.

Result



	MMI exposure (+)	MMI exposure (-)	Total
ODR	3	5	8
ODR +omphalocele	2	2	4
omphalocele	0	10	10
esophageal atresia	1	45	46
Total	6	62	68

omphalomesenteric duct remnants (ODR) 5 / 12 (42 %)
omphalocele 2 / 14 (14 %)
esophageal atresia 1 / 46 (2 %)] **p < 0.01**

the highest frequency of omphalomesenteric duct remnants

Discussion of Limitations

- incomplete maternal information**
 - > teratogenic effect of MMI
 - ➔ period (1st trimester of pregnancy)
 - ➔ dose
 - > maternal thyroid function
 - ➔ preterm / low birthweight
 - ➔ MMI embryopathy
- a retrospective analysis, small sample size**
 - > difficulty to perform a prospective large-scale study
 - enormous time to obtain a large sample size
 - decreased MMI prescription

Conclusion

Based on medical records, we investigated whether patients presenting with major MMI-related surgical anomalies had been exposed to MMI during pregnancy.

Omphalomesenteric duct remnants were **strongly** associated with MMI exposure.

Disclosure Statement

We have declared no conflicts of interest.

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