

## Bronze Baby Syndrome in an Infant with Down Syndrome

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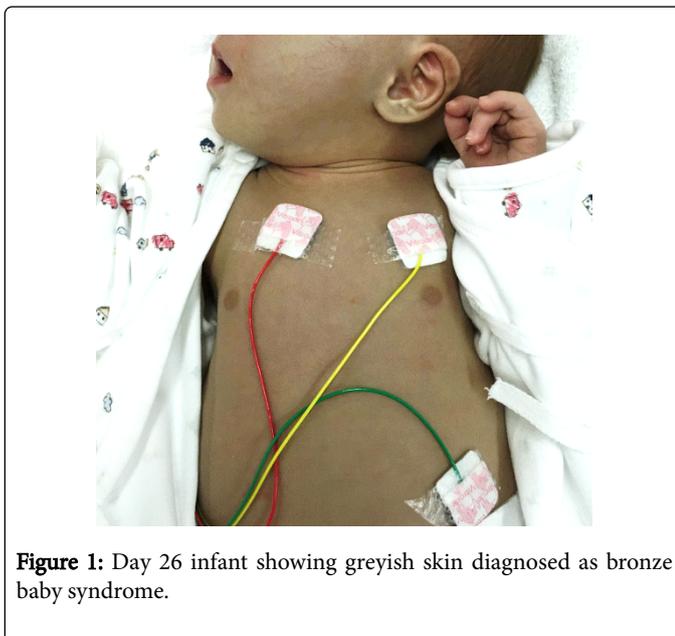
### Description

Owing to specific facial features and low muscle tone, Down syndrome was suspected in an infant delivered vaginally at 38 weeks (birth weight, 3018 g). On day 2, a blood test revealed a total serum bilirubin (TSB) level of 16.2 mg/dL (conjugated fragment, 0.9 mg/dL).

After liver disease, hemolytic disease, infections, and hypothyroidism were ruled out, phototherapy was performed on days 2-4. Phototherapy was stopped after day 4 because TSB level decreased to 11.5 mg/dL; however, it gradually increased, reaching 17.9 mg/dL (conjugated fragment, 1.8 mg/dL) on day 13.

Phototherapy was performed again on days 13 and 14 and 17 and 18. However, TSB level increased to 21.7 mg/dL (conjugated fragment, 1.8 mg/dL) on day 20. Although underlying diseases were examined again, no abnormality was found.

Therefore, we diagnosed spontaneous hyperbilirubinemia due to breastfeeding; intensive phototherapy was performed on days 20-26, targeting a TSB level <15 mg/dL. On day 26, the infant's skin became greyish, and Bronze baby syndrome (BBS) was diagnosed (Figure 1).



**Figure 1:** Day 26 infant showing greyish skin diagnosed as bronze baby syndrome.

After day 26, no additional phototherapy was required and greyish skin gradually resolved without any specific treatment. The infant's skin almost normalized on the 1-month health checkup (Figure 2).



**Figure 2:** After 1 month health checkup showing normal skin color.

Performing phototherapy in cholestasis can cause BBS; however, blood examinations did not reveal cholestasis in this case. We hypothesized that poor biliary excretion due to DS had caused BBS [1].

Because a specific threshold TSB value causing kernicterus remains unknown, phototherapy, a safe and convenient treatment option, is often performed preemptively to avoid kernicterus. BBS is believed to have no neurological sequelae, but there are no supporting clinical studies.

To avoid BBS, appropriate guidelines for treatment of persistent hyperbilirubinemia may be needed in the future.

### Conflict of interest

The authors declare no conflict of interest.

### Author Contribution

Yoshiki Kusama wrote this manuscript. Kentaro Kogawa treated this patient as attending doctor, and diagnosed bronze baby syndrome.

### References

1. Kaplan M, Vreman HJ, Hammerman C, Stevenson DK (1999) Neonatal bilirubin production, reflected by carboxyhaemoglobin concentrations, in Down's syndrome. Archives of Disease in Childhood-Fetal and Neonatal Edition 81: F56-60.