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Bilirubin Crystals in Neutrophils of Jaundiced Neonates and Infants

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A few investigations were carried out following the observation of yellow rhomboidal crystals within neutrophils in a severely jaundiced 2-month-old infant suffering from *Pseudomonas* septicaemia. The results are briefly reported below.

Of 42 neonates and infants with very high serum unconjugated bilirubin (UCB 21.1 ± 5.08 mg/dl), 36 showed these crystals in the neutrophils. 14 children and adults with jaundice (UCB 3.29 ± 1.96 mg/dl) did not show such crystal formation. In all the cases blood samples collected in EDTA vials were used for preparing thin and buffy coat smears that were stained by using Leishman's stain (fig. 1).

Direct smears of blood from the cases with high UCB and smears from different vials containing heparin, double oxalate, and citrate and from defibrinated blood did not show any crystals in neutrophils. These were only seen in blood samples with high UCB that were collected in EDTA vials and allowed to stand for over 30 min.

The yellow crystals were seen in about 20-30% of the neutrophils, and the number varied from 2 to 10 per cell. They measured $3.5 \times 1.5 \mu\text{m}$ on an average.

Fig. 1. a Thin smear (Leishman) showing two crystals in a neutrophil. b Same field in polarized light: bright birefringent rhomboids. $\times 1,200$.

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They were birefringent, soluble in chloroform, and showed a positive reaction with Raia's indirect diazo reaction. Direct diazo reaction and tests for other pigments yielded negative results. The crystals could thus be identified as unconjugated bilirubin [1, 2]. The mechanism of formation of UCB crystals in neutrophils is yet unknown.

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Comments to the Paper by Jørgensen et al.

(Acta haemat. 68: 39-42, 1982)

To the Editor,

I have read with interest the paper of Jørgensen et al., Effect of glucocorticosteroids on some coagulation tests [Acta haemat. 68: 39-42, (1982)]. We observed elevation of factor VIII activity in a patient with Cushing syndrome in 1961, whose hypercoagulability was corrected following bilateral adrenalectomy [1]. Therefore, coagulation studies were undertaken in other patients before and after glucocorticosteroid treatment, including hemophiliacs [1] and von Willebrand's patients [2] with similar results. Although the authors' findings about antithrombin III and factor VIII related antigen changes were not recorded previously, prothrombin time and partial thromboplastin time and other factors including factors V, VII-X, fibrinogen are well known. Because of improvement in coagulation, along with the tests, we have suggested its usage in the treatment of some bleeding disorders years ago [2].

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