marrow nor storage in case of poor utilisation, but this method reveals the distribution and amount of pure erythroid marrow and tissue iron respectively in the body section, those are very important for the study of iron metabolism and diagnosis of various hematologic disorders.

Iron Excretion into Gastric Juice

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In an effort to solve the mechanism of iron absorption, a special emphasis was placed on the storage iron content of intestinal mucosa, and as it is believed that the storage iron content of intestinal mucosa affects the iron absorption and iron excess reduces iron absorption, our attention was directed to the iron excretion from gastrointestinal mucosa. First our attention was focused to the gastric juice that can be taken out easily, and non-hemin iron content in gastric juice was examined. The results are as follows.

The iron content in gastric juice was found to be 290 μg/dl in healthy controls, a lower value of 110 μg/dl in aplastic anemia. These values were in a close correlation with serum iron or seideroblasts. Iron content of gastric juice of idiopathic hypochromic anemia was measured at various time intervals after intravenous injection of iron in early morning hours. Subsequently, iron contents of gastric juice clearly increased following intravenous iron administration. These data suggested iron excretion from gastric mucosa.

Radioactive iron appearance in gastric juice was observed clearly after intravenous administration of ^{59}Fe in normal rabbits, indicating iron excretion. The iron content of gastric mucosa was considerably high, and ^{55}Fe appearance was also indicated by radioautography in the epithelium of gastric mucosa. Iron deficiency state due to blood depletion in rabbits, distribution of ^{59}Fe in gastric juice and mucosa was silght. However, in iron excess state due to iron administration it was much higher than in the normal. There is iron absorption in gastric mucosa, and this absorption was marked in iron deficiency and extremely slight in iron excess. No iron excretion in gastric mucosa observed by intravenous ^{59}Fe administration after injection of iron into gastric cavity. On the other hand a increase of radioactive iron in gastric juice by intravenous ^{59}Fe administration was observed due to Desferrioxamine B injection. Similar parallel changes of iron excretion in gastric juice and urine was showed in a case of hemochromatosis injected with Desferrioxamine B. In idiopathic hypochromic anemia a correlation between the iron content and hemoglobin was seen, and this iron content was relatively high when anemia was mild. It is very interesting to note that non-hemin iron of gastric juice at the stage of recovery after iron treatment in idiopathic hypochromic anemia showed a higher value than in the healthy control. Namely, an increase of iron excretion in gastric juice was undoubtedly observed on the recovery of anemia after treatment and this slight excretion of iron during a prolonged period is considered a posibility of the cause of anemia. This condition may be interpreted as an "iron-losing anemia".

In conclusion, iron excretion from gastrointestinal tract especially from gastric mucosa was observed clearly. This iron excretion together with iron absorption may be controled by a single mechanism and sometimes unbalance of this mechanism may be a cause of anemia.