cal of acute bismuth toxicity. We have no reason to believe that the patient took more than 525 to 600 mg of bismuth ("7 or 8 pills" of 75 mg each) although no other means of verifying her account of the incident is available to us. The manufacturer of Bistrimate* recommends a dose of one or two tablets three times daily for seven to ten days for treatment of "chronic sore throat." Accordingly, the dose taken by the patient over a period of a few hours was about three times the recommended daily adult dose. There was no evidence, either from the history or from the renal function studies performed after recovery, that the patient had any preexisting renal disease.

Urizar and Vernier[5] recently were able to collect reports of 30 cases of fatal and non-fatal bismuth nephrotoxicity in children from the literature over the past 25 years. In most cases the bismuth had been given by injection for the treatment of stomatitis or warts. Since there is little evidence that bismuth is of any therapeutic value in these disorders, and since bismuth therapy for other diseases has become obsolete, there seems no good reason why bismuth preparations should continue to be marketed. Certainly physicians and patients may reasonably expect that preparations offered for the symptomatic treatment of sore throat will be free from serious toxicity, even should the recommended dose be substantially exceeded.

Summary

A case of acute renal failure in a 14-year-old girl due to an oral bismuth preparation is reported. The dose ingested by the patient—not on medical advice—was approximately three times the daily dose recommended by the manufacturer for the treatment of "chronic sore throat." It is difficult to find any justification for the continued use of such preparations.

*Smith, Miller and Patch, Inc., New York.

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Carotenemia Associated With Papaya Ingestion

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CAROTENEMIA, a well known entity, was first described by Hess and Myers in 1919.[1] The clinical yellowness of the skin is due to the deposit of beta carotene in the fat-soluble stratum cornium. The condition is noted more in areas having a thick cornium (for example, the soles and palms) than in areas without cornium (mucosa, submucosa and subconjunctivae). Carotenemia occurs in cases of excessive ingestion of certain fruits and vegetables as well as in patients with nephrosis, diabetes and hypothyroidism, and it has been associated with myxedema.[2]

Fruits and vegetables containing quantities of carotene are carrots, squash, oranges, yellow corn, apple juice, butter, eggs, yellow beans, kale, rutabagas, yellow squash, pumpkins, yellow turnips, sweet potatoes, peaches, apricots, parsnips and papayas. Hughes and Wooten[3] reported that farmers have learned to feed carrots and pumpkins to dairy cows in winter months so that the butter made from their milk will be a deeper yellow than that which results from hay feedings.

Other causes of a yellowish-red to orange hue of the skin have been reported. In 1960 lycopenemia associated with excessive ingestion of tomato juice was described by Reich, Schwachman and Craig;[4] they found a yellowish discoloration of the skin and concentration of lycopene in the serum and liver. In 1966 Hughes and Wooten[3] reported two patients with orange-colored skin, owing in one case to ingestion of carrots, yellow squash, rutabagas and tomato juice, and in the other to carrots and tomatoes.

In the case reported herein excessive ingestion of papayas caused clinical carotenemia, which

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abated when the patient discontinued eating the fruit.

Report of a Case

A 42-year-old Caucasian woman sought medical attention because of development of a lemon-yellow hue of her skin. On questioning she denied eating carrots, squash, oranges or tomatoes but said that she had been eating one and a half to two papayas a day for the past six months.* The weight of the amount eaten daily was about one and a half pounds.†

The patient was well developed and vital signs were normal. The skin was lemon-yellow, particularly on the palms and soles of the feet and in the folds of the skin. The sclerae were white and normal and the subconjunctivae and mucosae were normal. No other pathologic signs were present.

Leukocytes numbered 7,200 per cu mm with normal differential. Serum bilirubin was 0.4 mg per 100 ml indirect and 0.1 mg direct, and serum glutamic pyruvic transaminase was 20 UV units—all within normal limits. The icteric index at 5.8 units and serum carotene at 449 mcg per 100 ml were elevated. Protein-bound iodine was 6.7 mcg, cholesterol 240 mg and blood sugar 88 mg per 100 ml.

Six weeks after cessation of papaya ingestion the icteric index was less than four units and the serum carotene was 158 mcg per 100 ml.

Discussion

Development of yellow skin associated with excessive ingestion of papayas is an uncommon clinical finding. With the aid of MEDLARS at the Biomedical Library of the University of California at Los Angeles, I have been able to find two other case reports in the medical literature.[5,6]

Jacobs in 1892 reported a peculiar lemon-yellow color of the skin associated with eating papayas. His patient had been eating one papaya in the afternoon and one after dinner. "She was a healthy, full-blooded European . . . [in whom] . . . all organs function normally." Jacobs said that a colleague told him that this condition was possible, and an "oldtimer" told him that he had heard of a similar occurrence of yellowness due to papayas. He concluded that it occurred "only in full-blooded Europeans who are blonde and have transparent skin." In 1933 De Langden related yellowness of the skin and the eating of excess amounts of fresh vegetables such as tomatoes, carrots, turnips, and occasionally papayas. He alluded to a case but did not describe it in detail. Both Jacobs and De Langden stressed that their patients had no apparent symptoms except the yellowness. They reported no corroborating laboratory information.

In the case reported herein, there was no feeling of illness, and the yellowness and carotenemia were reversed within six weeks after cessation of papaya ingestion and did not recur.

Summary

A case of carotenemia due to papaya ingestion is reported. The condition was corrected after the patient excluded papayas from her diet. There were no adverse effects noted.

*Her husband was a fruit importer.

†Estimated by the author after having been given several papayas by the patient.

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