

Iron-deficiency Anemia without Occult Blood in Stool : Blood Loss due to Percutaneous Aspiration by a Folk Medicine Therapist

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A 78-year-old man insidiously developed iron-deficiency anemia. Occult blood tests of the stools remained consistently negative. Results of gastroscopic and colonoscopic examinations were normal. After systemic examinations had been performed, the patient admitted that he had been treated by an acupuncturist for the previous 18 months who had aspirated nearly 100 ml blood per month transcutaneously using a vacuum aspirator. Subcutaneous hemorrhages, which developed at the sites of vacuum-aspiration on the brachium, shoulders and back, had disappeared almost completely by the time the patient visited one month later. After the vacuum aspiration therapy had been stopped and oral administration of iron supplement started, the anemia improved rapidly. The patient has been doing well for the last 5 years, with normal serum levels of iron and ferritin. The present data indicate that history taking is very important for the differential diagnosis of iron-deficiency anemia, particularly when there is no evidence of blood loss in the gastrointestinal tract.

Introduction

When iron-deficiency anemia develops gradually in men or postmenopausal women, it is usually due to gastrointestinal bleeding. If occult blood tests in stools are positive, extensive examinations of the upper and lower gastrointestinal tracts are mandatory to rule out malignant disorders¹⁾.

Recently, we treated a 78-year-old man with iron deficiency anemia, which developed insidiously, without any positive occult blood in the stools. Repeated examinations of the upper and lower gastrointestinal tract revealed no abnormality. During history taking, however, the pa-

tient admitted that approximately 100 ml of his blood had been aspirated transcutaneously with a vacuum aspirator each month for the previous 18 months. We report this patient in detail because this peculiar etiology of iron-deficiency anemia has not been described in the English or Japanese literature¹⁾⁻⁵⁾.

Case Presentation

A 78-year-old man was admitted to our hospital with anemia of unknown origin. Since 1975, the patient had non-insulin dependent diabetes mellitus, and had been prescribed tolbutamide for the previous 6 months. The patient had suffered cerebral thrombosis in August 1991, and was pre-

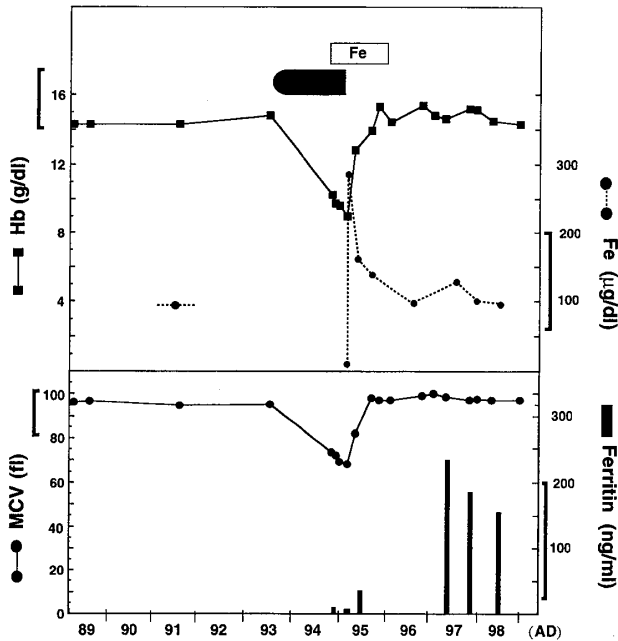


Fig. 1 Clinical course of the patient

The patient began to receive vacuum aspiration treatment from winter 1993, and stopped it in March 1995. Bars indicate normal ranges for Hb (14~18 g/dl) (upper panel) and MCV (82~102 fl) (lower panel), and serum levels of iron (60~200 mg/dl) (upper panel) and ferritin (25~200 ng/ml) (lower panel), respectively.

scribed ciclopidine. In 1993, pravastatin was prescribed for hypercholesterolemia (270 mg/dl). The patient had been doing well, but a routine blood test performed in November 1994 revealed moderate anemia (Hb: 10.2 g/dl, RBC: $431 \times 10^4/\mu\text{l}$, Ht: 31.8%) (Fig. 1). The CBC performed one year earlier had been normal (Hb: 14.8 g/dl, RBC: $470 \times 10^4/\mu\text{l}$, Ht: 44.8%). Tests for occult blood in the stools were repeatedly negative. The anemia worsened steadily, despite oral administration of ferrous sulfate (Fe 50 mg), which the patient did not take because it caused abdominal side effects. The patient had no tarry stools or hematemesis, and had never donated his blood. The serum levels of ferritin and iron decreased to 6.8 ng/ml and 21 $\mu\text{g}/\text{dl}$, respectively, and the serum iron binding capacity increased to 385 $\mu\text{g}/\text{dl}$ in February, 1995. The hemoglobin concentration decreased to 8 g/dl, and the patient felt general fatigue and

dyspnea on exertion. He was admitted for further examinations on March 28, 1995.

The patient was 152 cm tall, and weighed 54 kg; his blood pressure was 122/60 mmHg, and his pulse 78/min. His bulbar conjunctiva was not icteric, but his palpebral conjunctiva was slightly anemic. His neck and thorax appeared normal. A systolic murmur (Levine III) was audible, but the liver and spleen were not palpable. The skin was normally pigmented for a man in the eighth decade, and was not edematous. No hemorrhagic diathesis—such as petechiae, purpura or ecchymosis—was observed and the patient's nails were normal. On digital examination of the rectum, no hemorrhoid was detected. The patient was normal mentally and neurologically.

On admission, the patient's RBC was $412 \times 10^4/\mu\text{l}$, Hb 8.8 g/dl, Ht 28.9%, and reticulocytes were 12% (Table). The serum levels of iron and ferritin, determined after oral iron administration, remained low at 19 $\mu\text{g}/\text{dl}$ and 35 ng/ml, respectively, and his TIBC concentration was high (390 $\mu\text{g}/\text{dl}$). The serum erythropoietin level was very high (228 mIU/ml; normal range: 12~31 mIU/ml), and within the expected range for iron-deficiency anemia⁹. All chemical tests on his blood gave normal results, as shown in Table. All immunological tests gave normal results except for anti-nuclear antibody (1:80). The tests for occult blood using human Hb antibody were negative in three specimens.

Gastroscopic and colonoscopic examinations revealed no abnormal lesion. Abdominal echography and CT scans of the abdomen and the thorax revealed no abnormalities. The serum levels of tumor markers (α -fetoprotein, carcinoembryonic antigen, CA19-9) were all within the normal range.

With a tentative diagnosis of iron-deficiency anemia of unknown origin, the patient was prescribed oral sodium ferrous sulfate (50 mg Fe/

tablet; daily dose of 50 mg). The patient's reticulocytes increased to 32% in several days, at which time he admitted that he had been receiving acupuncture for shoulder pains, and that the therapist had recommended vacuum aspiration therapy to relieve the pain. A cup attached to a vacuum aspirator was applied to the skin and blood was aspirated through the skin (Fig. 2). Af-

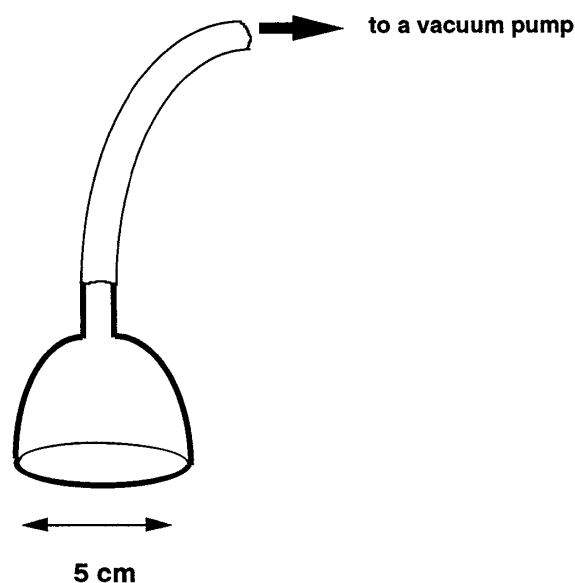


Fig. 2 A glass cup used for vacuum aspiration treatment

ter the aspiration therapy, the pains in the shoulders and back were relieved, and the patient felt refreshed and vigorous. He estimated the blood loss at approximately 100 ml per month.

After the vacuum therapy had been stopped, the patient continued to take iron, and the anemia improved rapidly within one month. The patient has been doing well for the last 5 years, without anemia.

Discussion

Although vacuum aspiration therapy on the skin is now illegal, it is still performed at acupuncture clinics by licensed, and sometimes unlicensed, acupuncturists. According to the patient, a glass cup with a tube that was connected to a vacuum pump was placed on the skin over the painful region, usually the brachium, the shoulder and the back. Negative pressure was then applied until the skin bruised, and blood mixed with interstitial fluid exuded through the skin, leaving a subcutaneous hemorrhage where the rim of the cup had been applied. The patient was willing to undergo this treatment, together with acupuncture, because it improved the pain in his shoul-

Table Laboratory data on admission

A) Complete blood counts		C) Blood chemistry	
RBC	429 × 10 ⁴ /μl (410 ~ 530)	TP	7.5 g/dl
Hb	8.8 g/dl (14 ~ 18)	Alb	4.3 g/dl
Ht	28.9 % (39 ~ 47)	A/G ratio	1.60
Ret	12 % (3 ~ 11)	T-bil	0.3 mg/dl
MCV	67.3 fl (82 ~ 102)	Indirect bil	0.1 mg/dl
MCH	20.5 pg (28 ~ 35)	GOT	17 IU/l
MCHC	30.4 g/dl (31 ~ 36)	GPT	11 IU/l
Plat	25.6 × 10 ⁴ /μl	LDH	184 IU/l
WBC	4,000 /μl	Al-P	178 IU/l
Seg	60.1 %	γ-GTP	16
Eosino	1.6 %	CK	17 IU/l
Lympho	34.2 %	BUN	15.3 mg/dl
Mono	3.9 %	UA	3.9 mg/dl
B) Urinalysis		Na	139 mEq/l
Protein	(-)	K	3.8 mEq/l
Glucose	(+)	Cl	104 mEq/l
Hemoglobin	(-)	Ca	9.3 mg/dl
Sediments	normal	P	2.8 mg/dl
		CRP	0.1 mg/dl

ders and back.

Because the patient developed hypochromic, microcytic anemia insidiously, and serum levels of ferritin decreased to less than 18 ng/ml, it is highly likely that the anemia was due to iron deficiency⁷⁾. Iron-deficiency anemia usually develops when iron stores in the body become exhausted. Usually, 1 mg of iron is absorbed from the intestine daily, and the same amount of iron is lost in a healthy adult man⁸⁾. Since steady blood loss of as little as 3 to 4 ml per day (1.5 to 2 mg of iron) results in a negative iron balance¹⁾, it is highly likely that the removal of 100 ml of blood per month for 18 months caused moderate iron-deficiency anemia. If the patient's iron storage is about 700 mg³⁾⁴⁾ and he lost 50 mg of iron per month, then his iron reserves would have been exhausted after 14 months. Thereafter microcytic anemia would have developed in the ensuing months. After the aspiration had been discontinued and oral administration of iron started, the anemia improved rapidly and has not recurred for the last 5 years.

It should be stressed that when a middle-aged patient develops iron-deficiency anemia insidiously, without any evidence of blood loss in the gastroenterological tract, blood loss due to unusual causes should be taken into consideration, such as alveolar hemorrhages, urinary loss and factitious bleeding¹⁾⁹⁾¹⁰⁾. Recently, we saw a similar case of vacuum aspiration-induced iron-deficiency anemia, but in this case the diagnosis was made very quickly, because subcutaneous hemorrhages were observed on the patient's brachium, and he confirmed that aspiration had occurred. Diagnosis of the present case, however, was very difficult, because the patient visited the hospital every 4 weeks and had his blood removed through the skin immediately after the visit to the hospital. Therefore, the subcutaneous hemor-

rhages had disappeared almost completely by the time of his next visit. Furthermore, he concealed the treatment until he was asked about the self-induced bloodletting. In any event, it is very important to take a detailed history, when anemia develops in elderly patients, and the stools contain no occult blood.

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便潜血陰性の鉄欠乏性貧血の1例
—民間療法による経皮的脱血療法による失血例—

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患者は鉄欠乏性貧血が次第に生じてきた78歳男性である。便潜血反応は常に陰性であり、上部および下部消化管検査でも全く異常は認められず、入院精査となった。全身的な検索を終えたところ、患者は1年半前より、鍼灸師に通院しており、1カ月におよそ100 mlほど、経皮的に真空吸引器による脱血療法を行っていたことを明らかにした。脱血治療時に上腕部、肩や背部に生じた皮下出血斑は、1カ月後に当院に来院するときまでには完全に消失していたため、貧血の成因が不詳であった。直ちに真空吸引療法を中止し、経口鉄剤を補給することにより、貧血は急速に改善された。患者は、最近5年間、元気に過ごしており、血清鉄もフェリチン濃度も正常範囲である。この症例は、便潜血が常に陰性の鉄欠乏性貧血患者を診た場合には現病歴を詳細に聴取することが最も重要であることを示している。