INDUSTRIAL MEDICINE AND SURGERY

INDUSTRIAL MEDICINE

The Journal of Medicine in Industry

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Vitamin B_{12} in Acute Subdeltoid Bursitis

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IN 1953,[1] the author reported six cases of acute subdeltoid bursitis which were treated with large doses of vitamin B_{12} (1000 mcg. per dose). Relief was rapid; x-rays revealed absorption of the calcium deposits. Since then, 40 additional patients have been treated successfully, sufficient to indicate that such use of vitamin B_{12} is an effective therapy in acute subdeltoid bursitis.

This newer material is presented as clinical observations only, without any attempted postulations as to the metabolic functions of B_{12}. No less, the author has been influenced by the investigations of Unglaub and Goldsmith[2] on the subject of folic acid and vitamin B_{12}. From their report the following items are extracted: "Vitamin B_{12} and folic acid both seem to be essential in the synthesis of nucleoproteins, although apparently at different stages of the process. . . . It seems certain that vitamin B_{12} is of importance in the metabolism of nervous tissue, although the mechanism of its action is not known. . . . There have been no reports of toxic reactions to the intramuscular administration of doses that far exceed those that are useful therapeutically. . . . Vitamin B_{12} has been used as a therapeutic agent in a variety of conditions other than the megaloblastic anemias. Its most widespread application has been in the therapy of a variety of neurological disorders including toxic, diabetic, alcoholic, and nutritional neuropathies, trigeminal neuralgia, and miscellaneous primary degenerative diseases of the central nervous system. Vitamin B_{12} has proved effective in relieving the pain of trigeminal neuralgia in a significant proportion of patients. The usual dosage is 1 mg. or more daily, given intramuscularly."

The following selected cases are presented for consideration:

CASE NO. 1. An executive was found baking under an infrared lamp during a prolonged heat spell in the summer of 1955. He had been placed there by the nurse, at his own request. He had had a stiff and painful left shoulder for several days, and stated that generally he attained relief by getting a "bake." Clinically, he presented the typical signs of an acute subdeltoid bursitis—pain and marked restriction in abduction of the shoulder, plus tenderness over the bursa. This patient, however refused to have an x-ray taken and did not react favorably to the suggestion of instituting a series of vitamin B_{12} injections. When he returned three days later, he was in marked pain. He stated that he had had a miserable week end, that he stopped after several holes of golf because of the severe pain and inability to raise his left arm. After his uncomfortable week end, the patient agreed to the procedure originally outlined and treatment with injections of vitamin B_{12} was begun. X-rays taken revealed an appreciable amount of callus in the subdeltoid bursa (Fig. 1). He experienced relief within a few hours after the injection of vitamin B_{12}. This relief continued steadily. Within five days, he was symptom-free. He was able to abduct his arm above shoulder level as compared to a 15% range of abduction on his first appearance. Interim x-rays, taken six weeks later, showed a definite absorption of callus (Fig. 2). There has been no return of symptoms and restoration of function has been complete.

CASE NO. 2. This case is presented because the patient was seen within hours after the onset of

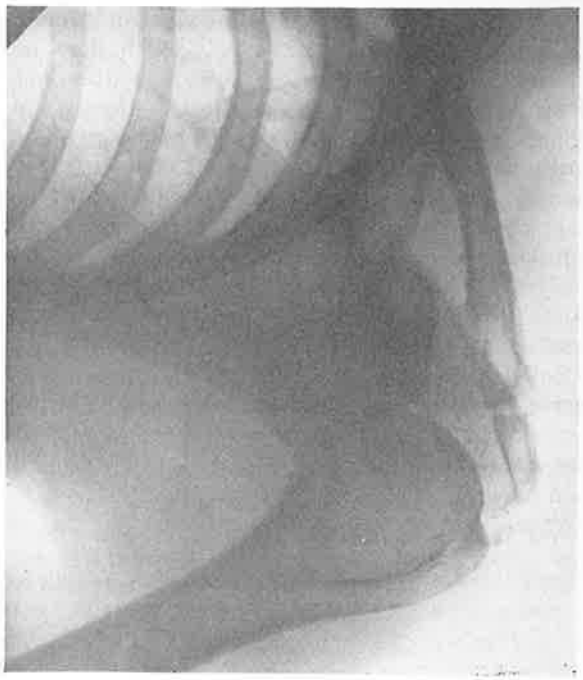

Fig. 1.
Case No. 1—August 8, 1955.

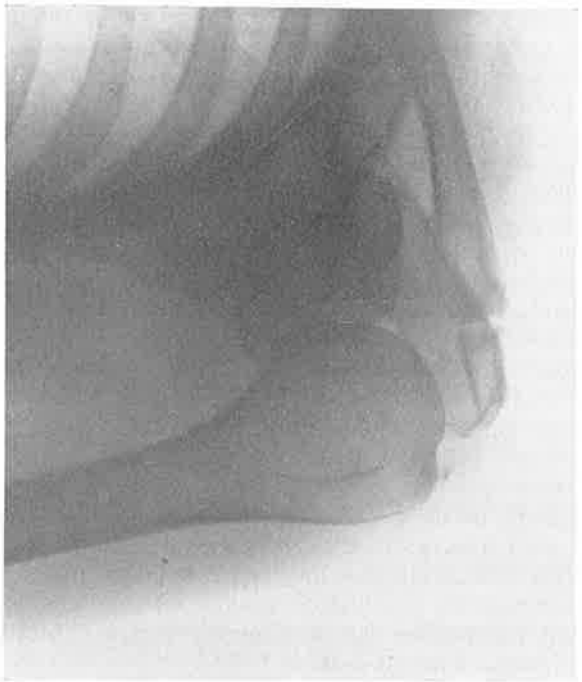

Fig. 2.
Case No. 1—October 3, 1955.

Fig. 3.
Case No. 2—August 12, 1955.

symptoms. Originally, he suffered a severe laceration of his thumb while out of town on a business trip, and had been sutured by a local physician; he appeared at my office for redressings. During one of these appearances, he casually mentioned that he had pain in the right shoulder of which he had become aware at six o'clock that morning. This pain became increasingly worse and motion of the shoulder more limited as the day wore on. He asked whether this pain in the shoulder might be connected with the thumb injury. He was advised that there was no relationship. Examination revealed pin-point tenderness over the subdeltoid bursa and marked restriction in motion of the shoulder. He was immediately given an injection of vitamin B_{12} and x-rays were taken. These showed a large calcium deposit (Fig. 3). Symptoms continued to increase in intensity until about 10:30 that evening (eight hours after the first injection). From that point on, there was progressive relief so that within less than 24 hours, this patient was quite comfortable and within a matter of another day, pain disappeared altogether. Follow-up x-ray taken October, 1955, (Fig. 4) shows absorption of callus. X-rays taken December, 1955 (Fig. 5) indicated much more absorption.

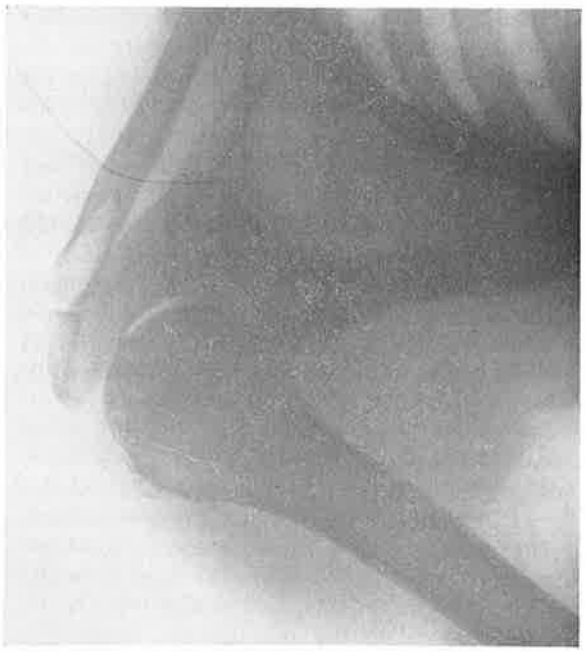

Fig. 4.
Case No. 2—September 30, 1955.

CASE NO. 3. This patient, a secretary, happened to be in a position to compare the various modalities used for the treatment of calcified bursae. Her evaluation of treatments seemed objective. Originally, in 1952, this patient developed a pain in the right shoulder and appeared for treatment three or four days later. X-rays showed calcification of the subdeltoid bursa. She was put on a course of deep x-ray therapy and, after an initial exacerbation following the first treatment, began to feel relief within a week. As far as the right shoulder is concerned, she has been asymptomatic since. About 10 months later, she complained of pain in the left shoulder. A diagnosis of bursitis was confirmed. This time, she was given cortisone, orally. Relief followed within several days, and for the following three years, she was asymptomatic. In September, 1955, she returned

Fig. 5.
Case No. 2—December 1, 1955.

complaining of severe pain in the left shoulder. Abduction was limited to about 15° and pain was severe. She stated that this was at least as severe, if not more so, as the pain she had had on prior occasions. Vitamin B_{12} injections were started immediately; x-rays were taken the same day. These showed a large area of calcification adjacent to the greater tubercle. She obtained relief that same night and claims that the rapidity of recovery was more pronounced when compared to the other modalities used. Clinically, she was able to abduct her arm fully within several days. The full course of treatment, however, was given and her symptoms disappeared completely.

Comment

AN APPRECIABLE number of cases of calcified bursae presenting acute symptoms principally of the shoulder (but also including the hip—three cases, and elbow—one case) have been successfully treated with large doses of vitamin B_{12} in accordance with the schedule described. This method has a number of advantages. The relief of subjective symptoms begins rapidly, sometimes within a matter of hours. Absorption of calcium deposits follows. No target area is necessary; the injections are given parenterally in the following dosage: Daily doses (1 cc. = 1000 micrograms) for seven to 10 days. Three times a week for two or three weeks. Thereafter, one or two a week for two or three weeks, depending upon clinical indications. There are no local or general reactions. There are no contraindications to its administration in cases of blood dyscrasias. It is an economic form of therapy as compared to deep x-ray exposures and treatment with hormone derivatives.

Summary

FORTY patients suffering from acute bursitis were treated with large doses of vitamin B_{12} with gratifying results. The simplicity of administration, the virtual absence of side effects, and the results obtained merit further clinical trial and controlled study.

NOTE: Since submission of the foregoing article there have been at least 10 added cases. The reactions to B_{12} were most favorable. Two professional colleagues who tried this method on several of their cases reported satisfactory results. In the author's capacity as Medical Director of a Casualty Insurance Company recommendations (by written communication) were made to a number of physicians located in various parts of the country to try this modality before instituting their requested radical procedures. Several accepted the suggestion and reported good results. Others of course, rejected the suggestion forthwith. Over five years have lapsed since the first trial. The excellent results obtained in all but two or three cases would seem to justify the use of vitamin B_{12} in cases of calcified bursitis.

(60 Hudson St.)

Citations

1. KLEMES, I. S.: Use of Vitamin B_{12} in Treatment of Acute Subdeltoid Bursitis. *Indust. Med. & Surg.*, 22:352 (August) 1953.

2. UNGLAUB, G., and GOLDSMITH, G. A.: Folic Acid and Vitamin B_{12} in Medical Practice. *J.A.M.A.*, 162:623, (June 16) 1956.

Executives Healthy

DON'T turn down top executive promotion for fear of an early grave, says American Management Association. According to a recent survey, men in top spots in industry as a group have a lower than average mortality rate. This finding is corroborated by the fact that life insurance companies sell policies to men in executive or higher-level occupations in general at the lowest premium level. "These affirmations that business executives do on the whole enjoy average health are reassuring, but, as doctors are quick to point out, 'average' health is not good enough," the study said. It credited the improved health of executives to increasing practice of periodic health examinations for executives as well as "rank and file" workers.

—From *Trenton, N. J., Trentonian*, May 9, 1957.