THE USE OF ULTRAVIOLET LIGHT IN ERYTHEMA INDURATUM *

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As this paper is based on observations of only five cases of erythema induratum treated with the Kromayer lamp, it seems quite unnecessary to review the literature of the disease or to compare this method of treatment with the results obtained from various other methods of treatment. Neither do I intend to review the literature of the treatment of disease with ultraviolet light in general, for I have found no reports of cases in which the light was used in exactly the same manner in which it was used in this group of cases. General exposure of the body to ultraviolet light, or general exposure of the legs, may prove valuable, but as this paper deals with the effects of the local application of the Kromayer lamp on the individual indurated areas of erythema induratum, the methods are not comparable.

At the outset let me state that I am referring to erythème induré des scrofuleux of Bazin occurring almost exclusively in young women or girls, a disease which I believe should be differentiated from the type occurring in middle-aged women which, according to Whitfield, has nothing to do with tuberculosis, and also from the atypical cases belonging to Darier's sarcoid group.

I believe the five cases here reported all belong in the tuberculous or tuberculid group. All occurred in women under 30. All were in the characteristic situations, the posterior and outer aspects of the lower half of the legs. All of the patients had poor peripheral circulation evidenced by cyanosis or cold feet or both. The one patient with a unilateral case showed evidence of a healed tuberculous gland in the neck, which was, except for its unilateral location, in every respect characteristic of erythema induratum of Bazin.

The treatments were carried out by pressing the quartz glass window of the Kromayer lamp firmly against the indurated areas for from one to two minutes to each area. When the lesions were small the healthy skin outside the area was protected with paper or zinc oxid plaster. The Kromayer lamp was used on a 110 volt direct current and was run at full strength for ten minutes before applying it to the indurated areas.

The following five cases illustrate the probable value of this method in the treatment of erythema induratum of the tuberculous or tuberculid type.

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REPORT OF CASES

CASE 1.—A woman, aged 24, single, well developed and well nourished, who worked in a biscuit factory and was on her feet nearly all day, had had indurated areas in the calves of her legs for two years, somewhat better in summer but never clearing up entirely. She complained of cold feet and occasional swelling of the ankles and legs. She was first seen by me on Oct. 5, 1919. She then had two deep seated indurated areas in the right lower calf and three in the left lower calf. There was no history of tuberculosis and no evidence of tuberculosis elsewhere. There were no ulcerations or scars. The Wassermann reaction was negative. The legs were slightly cyanotic, especially over the indurated areas.

At the first visit one area, $1\frac{1}{2}$ inches (3.81 cm.) in diameter was treated with Kromayer lamp with firm pressure for two minutes. On October 13, she reported that the area treated became blistered the day after treatment; it became hot, red and tender, and the ankle swelled so that she stayed in bed for two days. When seen on October 13, eight days after the first treatment, there was a dried crust covering the area treated; the swelling and pain had subsided, and the induration had entirely disappeared. At this visit the other four areas were treated in the same manner, but for only one minute to each area. One month later the induration had entirely disappeared leaving the skin of these areas purplish bronze, but otherwise normal in appearance.

Two years later, November, 1921, the skin of these areas was still discolored, but she had had no return of the indurations.

CASE 2.—A woman, aged 30, single, weighing 120 pounds (54.4 kg.), whose occupation was housework, had always had cold hands and feet. She was first seen on May 8, 1920. The trouble had been present four years, clearing up every summer but "worse than ever this spring." She complained of getting tired easily and of swelling of the legs toward night, with discomfort rather than pain. There was no history or evidence of tuberculosis elsewhere.

Locally she showed two deep-seated areas of induration about 1 inch (2.54 cm.) in diameter on the outer lower calf of each leg. There were also about a dozen small pea-sized indurations in the calves. The Kromayer lamp was used, the window being pressed against each of the four large lesions, one minute to each. Eighteen days later she came to me again. The burns had hardly troubled her at all, while the indurations had almost entirely disappeared. I did not see her again for a year, when she reported that all the lesions disappeared within six weeks after the treatment, and that she had had no recurrence during the next winter. All the areas treated showed brownish pigmentation, but there was no trace of induration.

CASE 3.—A woman, aged 22, single, a stenographer, had always been well except for trouble in the left eye since early childhood, which was diagnosed as tuberculous keratitis at the Massachusetts Eye and Ear Infirmary. Circulation in the hands and feet had always been poor. The present trouble had existed for six years, becoming somewhat better each summer. At her first visit, April 16, 1921, she showed small and large indurated areas on the calves and outer surfaces of the lower part of the legs. None of the lesions projected appreciably, but all were purplish and deeply indurated on palpation.

The Kromayer lamp was applied to one large induration on the right calf for two minutes. Eight days later this lesion showed a drying crust, but the induration had entirely disappeared. She had had a severe reaction to the light and was in bed for two days after the treatment on account of pain and

swelling. On April 24, five more areas were treated for one minute each. On May 7, all areas treated showed complete disappearance of induration. On this date the remaining indurated areas were treated. During the summer the trouble almost entirely disappeared, but the next autumn, on Nov. 21, 1921, she had three new indurated lesions, which were treated in the same manner. On Dec. 21, 1921, she was practically well. There were no palpable lesions, but there was marked pigmentation at the sites of all the old lesions. Since then she had had a few new small indurations which have disappeared, except for pigmentation, after a single treatment with the Kromayer lamp.

CASE 4.—A woman, aged 22, single, a hospital nurse, had always been well except for a tuberculous gland in the neck three years ago. This softened and was opened leaving a scar 2 inches (5 cm.) long on the right side of the neck. She was first seen May 13, 1921. The present trouble began while she was in training one year before. Her general health was excellent.

On the lower portion of the right calf she had two marble-sized deep indurations. The legs were somewhat bluish. On May 13, 1921, one of the areas was treated with the Kromayer lamp, one minute with pressure. Six days later, May 19, 1921, the induration had almost entirely disappeared from the treated lesion, which was covered with a drying crust. On this date the other lesion was treated.

In March, 1922, the patient reported that both lesions had entirely disappeared a month after the last treatment, and that there had been no recurrence.

CASE 5.—A woman, aged 24, married, seen on May 18, 1921, had always been well until the present trouble began, a year before. There was no history or evidence of tuberculosis except tuberculous glands in the neck during childhood. The feet and legs were always cold and bluish. She had received much potassium iodid without benefit. The Wassermann reaction was negative. She had been getting steadily worse during the last six months. She complained of swelling in the legs and ankles toward night.

When examined she had five large deep-seated indurated areas in the calves of the legs. At her first visit, two areas were treated one minute each with pressure. One week later these lesions were covered with drying crusts; the induration had nearly disappeared. The three other lesions were treated for one minute each.

Sept. 15, 1921, she said that she was greatly improved. During the last winter she has been on her feet all day; three new lesions developed which have all responded to treatment, the induration disappearing from each in a week or two after treatment.

CONCLUSION

None of these patients had had ulcerations at any time, so that none of the cases were examples of the severest type of the disease. Furthermore, it is impossible to draw definite conclusions from such a small number of cases. I feel, however, that the uniformity of the results from treatment of the individual lesions in these cases justifies the hope that this method will prove of considerable value in the treatment of this obstinate disease.

DISCUSSION

DR. FRED WISE, New York: The reason I hesitate to discuss the paper is because my experience is limited in the use of the ultraviolet light in this disease. I have had only three cases treated in this way. In the clinic with

which I am connected, we are accustomed to use the roentgen ray in erythema induratum, with excellent results, so the ultraviolet light has rarely been used. The results in three cases have been very good, but not better than the results from roentgenotherapy.

DR. A. W. STILLIANS, Chicago: I wish to testify to the value of this method, which was one of the first practical things I learned about ultraviolet light therapy. I think it is a safer method than roentgenotherapy, especially in the hands of those who have not had much experience in roentgenotherapy. According to my experience, it is very easy to cause irritation with the roentgen ray in lesions of the leg.

DR. E. L. OLIVER, Boston (closing): I offer as a suggestion to those who are using the Kromayer lamp in the treatment of this disease that they press the window of the lamp against the lesions for one minute.