

## Special Technic: Hypermobile Joint (A Preliminary Report)

by Earl H. Gedney, DO

Dear Readers:

With this issue, The Pain Clinic is pleased to present the first in a series of historical articles of interest, with an introduction and editorial comments by Dr. Felix Linetsky. The original article that follows is from the June 1937 issue of a journal entitled *Osteopathic Profession*. The original issue of the journal is shared by Drs. Linetsky and Rodney Chase.

### Earl Gedney, DO (1901-1976)

#### CONTRIBUTIONS:

- First described application of sclerotherapy for treatment of painful knee and sacroiliac instabilities.
- First described application of sclerotherapy and developed the injection technique for painful lumbar discs.
- Emphasized the pathology of sacroiliac joint and ligaments.

Earl Gedney was born of a dairy farmer of Welsh descent near Syracuse, New York. While at Syracuse College in the early 1920s, where he majored in engineering, Gedney hurt his back playing football. Fortunately, he was successfully

treated by an osteopathic physician. This event was instrumental in his decision to change his major from engineering to pre-med and pursue a career in osteopathy.

In 1926, Gedney graduated from the Philadelphia College of Osteopathy (PCO). From 1926 through 1930, he served an internship and a surgical residency at Bashline-Rossman Hospital in Grove City near Pittsburgh. After graduating from osteopathic school, Gedney's father told him that it was now his responsibility to educate his two younger brothers. He did so, and both of his brothers also became osteopathic physicians.

In 1930, after completing his residency, Gedney returned to Philadelphia, where he became a junior member of the teaching faculty in the departments of anatomy and surgery at PCO. Gedney developed a close relationship with Dr. Angus Cathie, the well respected Chief of Anatomy at PCO. Dr. Cathie eventually became a supporter of Gedney's ideas of ligamentous injections. By 1936, Gedney's injections with a solution of NeoPlasmoid were successfully used for painful collateral ligaments in unstable knee joints.

Gedney published an article describing his technique of ligamentous injections. In 1938, after presenting his second paper before the Osteopathic Clinical Society of

Pennsylvania, he expressed his gratitude to the Philadelphia College of Osteopathy "for permission to establish a clinic with the Osteopathic Technique Department to further study of this therapy." He also acknowledged the manufacturer of NeoPlasmoid for donation of the material. In time, Gedney's technique would evolve as sclerotherapy.

By the end of 1939, Gedney moved to Bangor, Maine, where he was named Chief Surgeon of the new Bangor Osteopathic Hospital. Maine was one of only two states in the country that allowed animal experiments. Consequently, Gedney was able to experiment various injection techniques of the disc. Philadelphia College of Osteopathy had not been enthusiastic about funding experiments with injection treatments.

Enthusiastic, energetic, and well trained at the age of 39, Gedney engaged in a busy surgical and orthopaedic practice in Maine and continually improved his injection method. He developed a technique for injecting lateral ligaments of lumbar discs, which he called "lateral reflections of posterior and anterior longitudinal ligaments."

It was in Maine that Gedney developed the pumice suspension. He gained expertise and experience by treating local woodsmen with painful back problems. After 11 years, Gedney published another article



entitled, "Disc Syndrome," in which he described the symptomatology of acute disc problems in the lower back with referred pain patterns. He emphasized the difficulties of making a precise diagnosis in acute situations. In addition, Gedney described a technique for intradiscal injections and the importance of injecting more than one level to effect lasting pain relief.

*Felix S. Linetsky, MD*

Dr. Gedney's article published in June 1937 follows as it appeared originally.

## **Special Technic Hypermobile Joint (A Preliminary Report) by Earl H. Gedney, DO**

Early in the nineteenth century, men began using various irritating solutions to build up fibrous tissue in the human body. They used many different formulas to gain the desired result of irritation with the production of additional fibrous tissue and without suppuration. These solutions have now been so perfected and the technic so well established that at present surgery is largely elective in the treatment of reducible abdominal hernia.

The many cases of disability due to lacerated and elongated ligaments resulting in hypermobile joints seen in osteopathic practice led to the reasoning that this same principle might be adaptable in the treatment of the "trick" knee and the sacro-iliac that is always "flying out." The pathology of the "trick" knee is an

elongated tibial or fibular collateral ligament following laceration in trauma which allows abnormal motion of the tibia while in near-extension.\* The anterior and posterior sacro-iliac ligaments also suffer a similar affliction from repeated strains and sprains until in due time only a belt will hold them in comfortable approximation.

The bandages and supports prescribed for these conditions are at best cumbersome and contribute little to the patient's comfort, their chief value being in the constant reminder to the wearer that he must use the affected part with the utmost discretion or he will suffer for it.

Acting upon these thoughts, we selected several joints for treatment. The results of treatment were so far beyond expectation that it was felt a report of the marvelous improvement should be made. The following materials are necessary for the treatment: a 5 cc. hypodermic syringe; a 1" 23-gauge needle, rustless and in good condition if injecting the knee, or a 2" 23-gauge needle if treating the sacro-iliac joint; and any of the proved irritant (hernial) solutions. Neo-Plasmoid and MacDonald's solutions have given us satisfactory results.

The technic of treatment is as follows: assemble first the sterilized hypodermic syringe and needle, and if using Neo-Plasmoid draw 3-4 cc. of the solution into the barrel, extruding all the air from the syringe. The skin has been prepared meanwhile with an antiseptic solution, preferably tincture of merthiolate 1-1000, over the site to be injected. If you are working on the knee, the tibial or fibular collateral ligament is now isolated with the knee in flexion,

and the needle carried through the skin, superficial fascia and deep fascia directly into the center of the affected ligament, where 1 cc. of the solution is deposited. The needle point is then carried along the same ligament anteriorly, posteriorly, superiorly or inferiorly, as the case may be, depositing the remainder in small quantities in and beneath the deep fascia around the ligament. The needle is then withdrawn and the knee bandaged in complete extension with instruction to rest the part for 24 hours, weight-bearing being allowed thereafter but no rigorous use until a reasonably expectable maximum result has been obtained. This may be ascertained by the return to normal or near normal of the tibial restriction on the femur when in extension and near-extension.

When the sacro-iliac is treated, the same principle is used except that the solution is deposited in small amounts into and along the entire affected posterior sacro-iliac ligament, after which a belt to be worn throughout the course of treatment is applied rather tightly around the innominate below the anterior-superior spine of the ilium.

The procedure requires a thorough knowledge of the anatomy of the joints. Dexterity in administration improves with continued application. It has its application in the treatment of joint instability due to elongated ligament structure following trauma from whatever cause and in the recurrent meniscal knee cartilage lesion as well as in atrophic arthritis. The response of the hypermobile sacro-iliac is truly remarkable. Reports on other types of cases now under treatment will be forthcoming at a later date.

Case Reports: Mrs. B., age 68, white, fracture of neck of right femur, in bed 8 months partly due to lack of confidence in using the healed member, but chiefly due to an instability of a right hypermobile knee which would "fly out" from under her on repeated trial. The X-ray examination showed an atrophic arthritis with narrowing of the articular fissure. The tibial rotation on the femur in

near-extension\* ranged through an arc of 1½ cm. Eight weeks of treatment produced a tibial motion of 0.5 cm. or less and a very well pleased, walking patient.

Mr. G., age 45, white, constantly recurring low backache, centering over sacrum and sacro-iliac for past several years. Focal infection, rectal disease, postural and osteopathic defects ruled out by appropriate

examination and treatment, but still pain continued. The sacro-iliacs were found hypermobile and injected after previous failure in treatment—to the great pleasure of the patient who now has but slight discomfort.

\*The term near-extension used here is about 10° of flexion.

Philadelphia, Pennsylvania.  
*Osteopathic Profession*, 4:9:30-31,  
June 1937.

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