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**Thyroid Foundation of Canada**

**La Fondation canadienne de la Thyroïde**

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## **THYROID RELATED EYE DISEASE**

Jeffrey J. Hurwitz  
Presented in Toronto  
Saturday, June 12, 1982

*(Dr. Hurwitz is an assistant professor at the University of Toronto and a consultant in ophthalmology at Sunnybrook Hospital and at Scarborough General Hospital)*

Dr. Hurwitz gave a lecture on thyroid-related eye diseases and commenced by pointing out that not everyone with thyroid disease has eye problems, but some people may have functional or cosmetic problems, or both.

He felt it important to explain the medical terms for the various parts of the anatomy and structure around the eye as patients would constantly hear them mentioned. Illustrating his explanation with slides, Dr. Hurwitz referred to the activity of the endocrine glands in relation to thyroid disease and showed how exophthalmos (protrusion of the eyes) is a sign of the probable presence of thyroid disease.

A picture of the comedian and actor, Marty Feldman, clearly showed the white of the eye above and below the iris, the protrusion of the eye and that the eyes do not focus directly ahead. Dr. Hurwitz particularly emphasized that although people may have double vision, it is extremely rare to become blind, especially if the patients are under ophthalmological care.

He explained the working of the muscles of the eyelids -- the superior muscles contract, enabling the person to look up, and the inferior muscles are used to look down. Certain muscles attached to the lid are used for deliberate voluntary movement and secondary muscles relate to involuntary autonomic action. The slides showed the composition of the bony framework around the eye, the surrounding fat between the muscles and the optic nerve, and the lachrymal gland which secretes the tears which flow into the nose.

It was then understandable when Dr. Hurwitz explained that the two major eye problems relating to thyroid disease are:

1. that the eyes protrude - being pushed out by fluid accumulated in the fat behind the eyes and in the muscles of the eyes; and
2. that the eyelids retract - the muscles become infiltrated with tissue cells and fluid, causing them to swell, which results in the formation of scars and the retraction of the muscles.

It is important to discover if the patient has either one or both of these problems.

The eyes water and become unduly exposed. The patient may develop a "staring" expression. At night, the person may sleep with the eyes open, resulting in dry eyes and may suffer from either a mild irritation or real pain. Dr. Hurwitz suggested that eye drops (false tears) may be used to alleviate irritation when the eyes do not close properly. The problem may also be cosmetic as it results in a considerable change in appearance.

However, he said that these eye problems are generally self-limiting over a period of approximately two years, emphasizing that this is a rule-of-thumb, but that in most cases the puffiness, redness and swelling lessen after two years. If a patient is not in too much trouble, it is preferable to wait this two-year period before attempting surgery, although many people do not need surgery at all.

Excessive pressure can be relieved by orbital decompression, which entails removing fat from behind the eyes and allowing it to flow down into the sinus area or into the cavity at the side, in front of the ear. Surgery can also be done on the extraocular muscles. The lids can be lengthened or corners can be stitched.

Dr. Hurwitz emphasized that there is no one magic operation to get the eyes back to normal. It is a matter of degree and things do improve with time. First of all, the thyroid gland, generally overactive, must be treated, but it is possible that the eyes may become worse after the thyroid situation is normalized. He mentioned how important it is to differentiate between thyroid disease and tumors. Quite commonly, with thyroid disease, there may be only one eye involved and lid lag and lid retraction are usually signs of thyroid involvement.

He suggested that when the eyes water, it is advisable not to wipe the eye downwards, which tends to pull the lid down, but to wipe the eyes upward to save the lids from drooping. He explained that tears have enzymes and affect the facial skin, causing bumps and wrinkles. The thyroid gland releases abnormal protein or antigens, causing antibodies to circulate, which results in an allergic-type of reaction. These antibodies settle in the fat and muscles of the eye and eyelid, tissue fluids and tissue cells accumulate in the muscles and in the fat, producing swelling and inflammation. Afterwards, a scar is produced which causes problems. The activity of the gland may be overactive, underactive or normal, but the antibodies will produce this type of reaction.

Dr. Hurwitz showed slides illustrating various eye problems. He said that the most serious ones involved the optic nerve, but these are quite rare. The muscles behind the eye thicken and limit eye movements, possibly resulting in an inability to look up and in limited sideways movements. He showed how a person with this problem tends to lift the chin in order to counteract the situation. He felt that where decompression is advisable, radio therapy had not been found to give as good results as was first hoped, and that the drug Prednisone was not always sufficient to handle the problem. He pointed out that while complications may arise from any operation,

this is very rare and there have been some very good results. It may be necessary to operate more than once in the case of lid surgery. He also showed how excess fat which has been pushed forward may be lifted from above the eyelid using either a local or general anaesthetic, as the patient prefers.

Dr. Hurwitz's lecture was both comprehensive and encouraging, and he presented the facts in a clear, understandable manner to those without medical training. Dr. Hurwitz, Senior, very kindly assisted by operating the slide projector.

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