the capsule freely and carefully, the dangers of
scratching the iris, obscuring the operation with
blood, oppressing the eye, breaking up the lens, and
thus excising the first steps of what may prove a de-
structive inflammatory process, is avoided.

Since the above was written, I have had further
opportunities of testing both Schultze’s and Mooren’s
operations, with excellent results. I may also men-
tion, that at the recent Heidelberg Ophthalmological
Congress, Professor Jacobson stated that, in 140 op-
erations, he had only lost three eyeballs. In one remark-
able case, a patient, aged 85, was kept narcotised for
three hours and inhaled upwards of six ounces of
chloroform. In an animated discussion which ensued,
concerning various points connected with extraction,
the general feeling appeared to be in favour of iridec-
tomy only in special cases such as I have pointed out
above. Von Greife also expressed an opinion con-
trary to the generally received notion, that of two
cataracts the less ripe one afforded the best results
from operation. Mr. Critchett, at this meeting, also
stated that he had met with such success with
Schultze’s method and his own modified spoon, that he
now never thought of performing the usual flap op-
eration.

PROTRUSION OF THE EYEBALL:
BEING THE SUBSTANCE OF A LECTURE.
By Haynes Walton, F.R.C.S., Surgeon to St. Mary’s,
Hospital, and to the Central London
Ophthalmic Hospital.

PROTRUSION OF THE EYEBALL.

Protrusion of the eyeball arises from several me-
chanical causes, which are very dissimilar in their
kind, and in each there is an amount of detail that
could never be supposed by any one not much en-
gaged in ophthalmic practice.

Every one does not know the difference between
a protruded eyeball and an enlarged one, and an
error is very excusable in the inexperienced. Con-
gonial enlargement has been met with, but very
rarely; and, while the magnitude of all parts remain
the same, the greater absolute magnitude is very ap-
parent. Enlargement from disease always carries the
evidence of diseased action, if not in the altered form
of the cornea, or in the increased size of the chambers
of the eye from greater aqueous secretion, certainly
in the bulging and altered colour of the sclerotics.
In mere protrusion of the eye without distinction of
causes, the upper eyelid covers the eye, and hangs
down lower than usual, is more or less paralytic and
puffed, with its surface generally of a dusky red
colour, and traversed by large veins. On the other
hand, in actual enlargement the eye is remarkably
uncovered, and presents a staring appearance, while
the upper eyelid is merely pushed forward and re-
tained in that position, but is in other respects un-
changed.

For the sake of convenience, I shall arrange the
causes that thrust the eye out, under those that exist
within the orbit, and those that are external to it. It
occurs to me to remark that, in no other subject in
the range of ophthalmology is the knowledge of ana-
tomy and surgery so needed, alike for diagnosis and
for treatment. He must be a well educated and
practical surgeon, accustomed to surgical operations
in general, who is justified to undertake all the in-
stances of disease that should come under this clas-
sification. It is here that the limited province of the

“ocular” of old is so apparent. First, then, of causes
within the orbit.

Venous Congestion. Under this head I venture to
place the protrusion of eyeballs that the oculist per-
different opinions still prevail about the origin of it.
However, I believe in the cause assigned.

Few persons can have failed to notice in some fe-
males, for the most part pale, more or less prominent
eys, which are usually rolled about in a vague and
mystical manner, especially while speaking. There
are marked degrees of the prominence. Sometimes
you are attracted by a peculiarity merely, and you
took twice before you are sure what is wrong; and
sometimes the prominence horrifies you at a glance,
and disagreeable enough it is then. The eyelids are
generally puffy, and the conjunctivae reddened,
and the pupils dilated. Males are not exempt from the
disease; but so seldom does it occur in them, that I
have never met with an example.

Associated with protruding eyeballs is enlargement
of the thyroid gland; not always, it is true, but nearly
always. I have not seen it absent, and the increase
seems due to the simple enlargement of the glandular
structure. In a single case only that I find on rec-
dard, was the goitre of the cystic variety; and here it
was very large.

There is generally some heart-disturbance, or, more
correctly, disturbance of the circulation. The cardiac
impulse is great; the sounds are loud and audible over
the entire chest; and in the large vessels a systolic
venous murmur is perceptible. It is difficult to judge
of the natural pulse, as there is so much susceptibility to
excitement, that the asking of a few questions pro-
duces emotion.

My colleague, Mr. R. Taylor, has published an an-
alysis of twenty-five cases, collected from his own prac-
tice and that of others. Of these, twenty were females
and four males; of one, the sex is not mentioned, but
from the context, the patient appears to have been a
male. Three deaths occurred, in each instance in
males. In two, there was a post mortem examina-
tion. Both of these had long suffered from extensive
organic disease. In one, related by Sir Henry Marsh,
there was considerable dilatation with hypertrophy,
chiefly of the left side of the heart, and some amount
of valvular disease, chiefly of the right. The right
internal jugular vein was very much dilated. In the
other, described by Dr. Freind, the heart was large
and soft, and flaccid; all the cavities, but especially
the ventricles, were dilated; the valves were larger
than usual, having accommodated themselves to the
increased size of the cavities, but they were other-
wise normal. The internal jugular veins were much
dilated.

As a rule, however, it does not appear that organic
disease of the heart is at all necessary to the produc-
tion of this peculiar condition of the eyeball. The
palpitation, which is invariably complained of, is
due to anemia. This in the few instances in which the
affection occurs in males, may result from extensive
disease of the internal organs, from extensive and
long continued loss of blood from piles, or from any
other cause productive of destruction of the red cor-
puscles. In females, the starting point of the disease
is almost invariably some form of exhausting dis-
charge in connection with the uterine organs.

I cannot say that the impairment of sight is a con-
sequence of this affection. It has never existed in
any of the cases that I have so examined; in fact,
there is no disease of the eyeball proper.

Of the actual nature of the pathological change in
the orbit causing the protrusion, we are certainly ign-
orant so far as demonstration goes. It has been
attributed to inflammatory swelling of the orbital con-
ents, not sufficiently active to produce suppura-

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tion, or to cause effusion into the orbital cellular texture; and to loss of tonicity in the orbital muscles, so that the globes, as it were, drop forwards. The last is, perhaps, the least likely of these unlikely things. There is not any loss of voluntary power, which I think would be inevitable, were there loss of tonicity on the orbital muscles; and the freest movement of the eyes may be combined with the greatest protrusion. Again, in the most debilitating diseases, with perfect muscular prostration, the eyeballs do not protrude.

I am inclined to attribute the protrusion to congestion of the deep-seated veins of the orbit, which I think offers a better explanation than any other of the variable amount of the exophthalmia, and of the readiness with which the eyeballs can be replaced by gentle pressure. Mr. Taylor, adopting Dr. Marshall Hall’s views as to the spasmodic contraction of the muscles of the neck in paroxysmal and convulsive diseases, suggests that this may be the cause of the impeded return of the blood from the head; and this view is supported by the fact that, in the only two post mortem cases that have been opened, the jugular veins were found to be much dilated, as though there had long been some cause of obstruction at the lower part of their course; and, as in neither case was there any solid growth which could have impeded the circulation, it is not unreasonable to suppose that the obstacle was due to muscular spasm. But if this were true, how is it that there is no cerebral congestion, when the return of the blood from the brain is so checked?

It has been supposed that, if venous obstruction be the cause of the protrusion, to dilatation of the thyroid gland must the obstruction be attributed. The reader must decide how much this is worth, when he is told that considerable protrusion of the eyes is met with when there is not any perceptible thyroidal swelling.

From what has been said as to the nature of this disease, it will be obvious that the treatment must be directed towards overcoming the exciting cause of the anaemia, which, in the great majority of instances, depends upon uterine disorder. In addition to the special measures which may be adopted for this purpose; proper nutritive food, and some preparation of iron will be invariably found useful; and those who believe its efficacy, may apply iodine locally over the thyroid gland. I have not seen complete recovery in any case, although several are recorded; but I have used with considerable advantage, and in all the cases I have treated, improvement has followed the steady employment of the means I suggest.

Abscess. An abscess may form within the ocular tunic, and the symptoms would be protrusion of the eyeball, and pointing or swelling externally between it and the eyelid.

Pus may be deposited in the orbital cavity without the ocular tunic, and whether it is acute, subacute, or chronic suppuration, the physical characters will be the same; namely, the bulging of the orbital portion of the eyelid corresponding to the seat of the suppuration. The formation of pus is, according to my experience, a common orbital affection; and when, with protrusion, there are the usual constitutional symptoms attendant on abscess—the pain, with or without movement of the globe, the tension and puffiness of the eyelid, and the throbbing—we should early endeavour to discover the deposit by an exploratory puncture, made, if practicable, within the eyelids, in the probable direction of the abscess.

Infantile protrusion of the Orbital Arterial Tissue, Idiopathic. With this protrusion from this cause, there is always much swelling and redness of the conjunctiva—chemosis, as it is called. As an idio-