Van Herick's Method for the Estimation of the Chamber Angle

Performed on the slit lamp without any additional aids, the Van Herick test allows quick assessment of the lateral chamber angle.

A narrow slit of light is projected onto the peripheral cornea at an angle of 60° as near as possible to the limbus. This results in a slit image on the surface of the cornea (SC, Fig. 1), the width of which is used as reference for the assessment of the conditions in the chamber angle. The width of the chamber angle (CA, Fig. 1) can be described by the distance between the corneal slit image (SC, Fig. 1) and the slit image on the iris (SI, Fig. 1).

Grading

If the distance between the posterior surface of the cornea and the iris (CA) has at least the same width as the slit (SC) projected onto the cornea, the chamber angle is widely open. Angle closure is very unlikely. This state corresponds to Grade 4 of the grading according to Van Herick (Fig. 2). If CA is half of SC, Grade 3 according to Van Herick (Fig. 3). The chamber angle is open and an angle closure is unlikely.

Angle closure is possible, if CA is a quarter of SC. Van Herick classifies this state as Grade 2 (Fig. 4). In this case, the affected eye should be measured with a gonioscope. With Grade 1 (Fig. 5), the width of CA is smaller than a quarter of SC. Looking through a gonioscope, a dangerously narrow chamber angle is visible; angle closure is likely. If between the corneal slit image and the slit image on the iris no space is visible (Fig. 6), the chamber angle is closed and an angle closure already existing. This grading is summarized in Table 1.

Table 1
Grading according to Van Herick

Grade	Relation between corneal slit image SC and anterior chamber depth CA	Interpretation
4	1 : 1 or higher	Angle closure very unlikely; Chamber angle approx. 35°… 45°
3	1 : ½	Angle closure unlikely; Chamber angle approx. 20°… 35°
2	1 : ¼	Angle closure possible; Chamber angle approx. 20°
1	1 : < ¼	Angle closure likely; Chamber angle approx. 10°
0	closed	Angle closure; Chamber angle approx. 0°

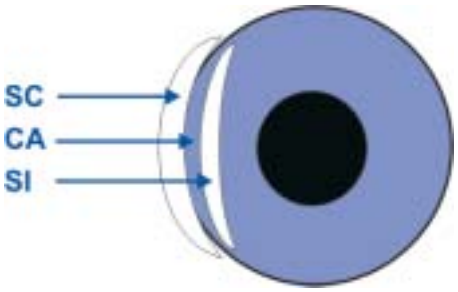
Relevance and limits of the method

Using this method the chamber angle can be assessed temporally and nasally. In practice, it is advisable to form the average of two estimations. From this, one can infer an accurate assessment of the total chamber angle. However, the results obtained in this way cannot replace gonioscopy. The method rather serves for the quick assessment of the risk of an angle closure without stressing the patient.

This method is of particular significance before the diagnostic application of a mydriatic. If a narrow chamber angle exists, the administration of a mydriatic may cause an angle closure.Previous assessment of the chamber angle by the Van Herick method can help to estimate and minimize the risk of a provoked angle closure.

Conclusion

The Van Herick method for the estimation of the chamber angle used in a slit lamp examination does not require appreciable time. Moreover, the performance of this test does not represent additional stress to the patient. Thus, the Van Herick test is a method that is very well suitable for the quick and easy assessment of the chamber angle.



Caption

SC	-	Slit on cornea
CA	-	Chamber angle
SI	-	Slit on iris

Fig. 1

Schematic diagram of the slit image in the Van Herick method

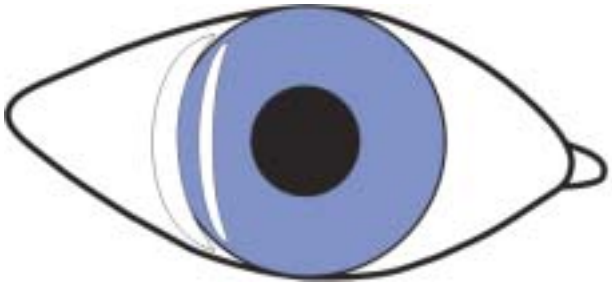


Fig. 2

Van Herick Grade 4

Relation SC (cornea): CA (chamber angle) = 1 : 1 or higher

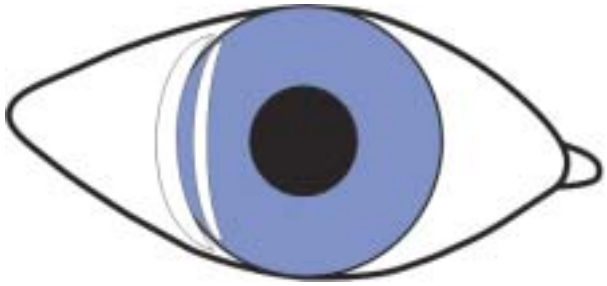


Fig. 3

Van Herick Grade 3

Relation SC (cornea): CA (chamber angle) = 1 : ½

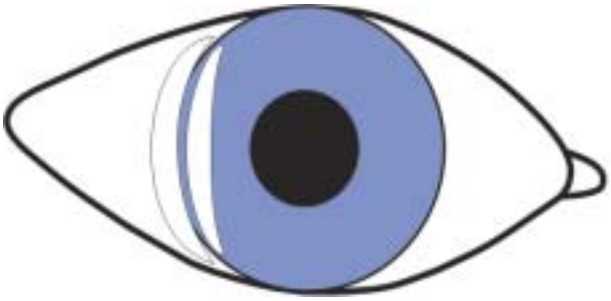


Fig. 4
Van Herick Grade 2
Relation SC (cornea): CA (chamber angle) = 1 : ¼

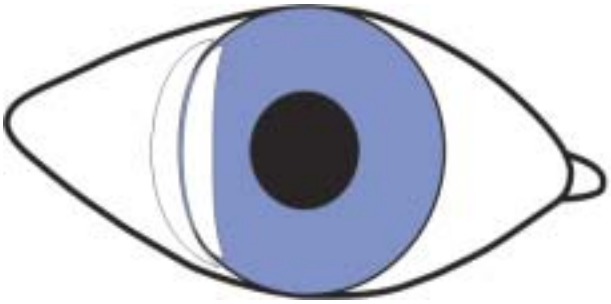


Fig. 5
Van Herick Grade 1
Relation SC (cornea): CA (chamber angle) = 1 : <¼

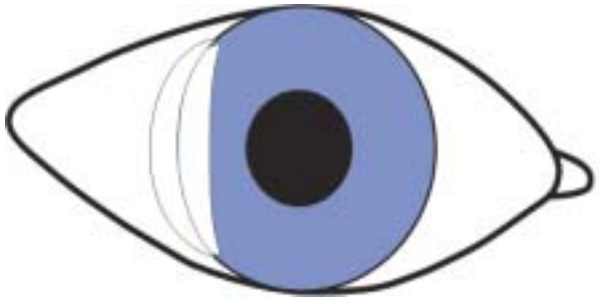


Fig. 6
Van Herick Grade 0
Chamber angle closed

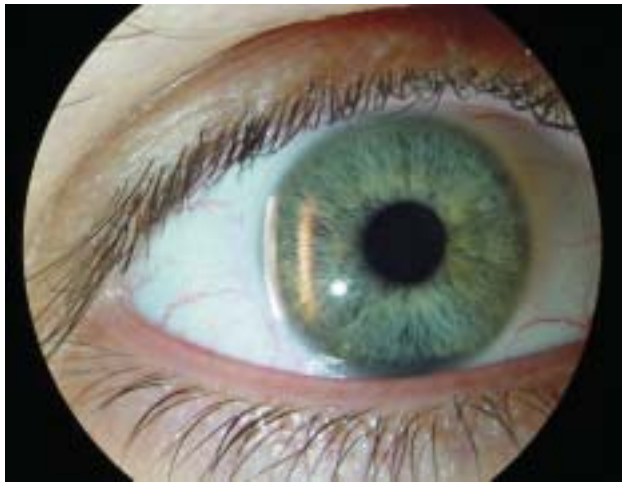


Fig. 7
The optically empty region between the two slit images is clearly wider than the slit on the cornea. The chamber angle is wide open corresponding to Grade 4 of the grading according to Van Herick.

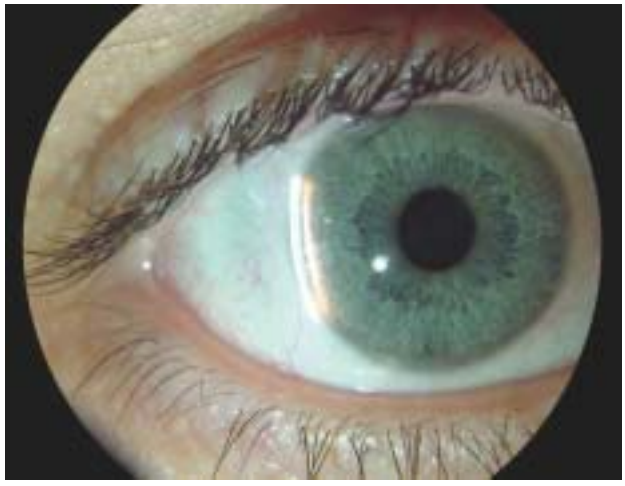


Fig. 8
The width of the optically empty region between the two slit images is approximately one quarter of the width of the corneal slit image. The chamber angle is relatively narrow corresponding to Grade 2 of the grading according to Van Herick.

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References

1. Bonomi L: Usefulness of the Van Herick test. Glaucoma World Newsletter 1997; No. 3

2. Gross G: Differentialdiagnose der Winkelblockglaukome. Der Augenspiegel 1999; 9: 13-26

3. Martonyi CL et al: Clinical Slit Lamp Biomicroscopy and Photo Slit Lamp Biomicrography. 2nd edition; 1985

4. Van Herick W, Shaffer RN, Schwartz A: Estimation of width of angle of anterior chamber. Incidence and significance of the narrow angle. American Journal of Ophthalmology 1969; 68: 626-629

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