

Korotkoff method

The Korotkoff method (also referred to as the Auscultation method) is a method of measuring blood pressure. This method uses a tonometer, consisting of a rubber cuff, an inflatable bag and a manometer, and a stethoscope. The stethoscope then listens to the pulse of the brachial artery, which can be found in the cubital cavity.

Procedure Korotkoff methods

1. We put the rubber cuff of the tonometer on about half of the arm.
2. We inflate it with an inflatable tonometer bag.
3. We place the end of the stethoscope in the place of the cubital well.
4. We release the air from the rubber cuff inflatable bag.
5. We listen to the individual sounds emitting flowing blood.



Blood pressure measurement

Korotkoff phenomena

Korotkoff's phenomena are **murmurs**, that result from the turbulent flow of blood flow after dropping the cuff. The first of these phenomena is audible when systolic pressure and blood pressure in the *brachial artery* equalize. Korotkoff's last phenomenon is heard as soon as the pressure in the cuff drops below diastolic pressure and the blood begins to flow continuously (laminar flow).

Korotkoff's phenomena have several phases:

- Phase 1 = **systolic pressure**. The first clear tone we hear in a stethoscope. A palpable pulse also appears.
- Phase 2 - Tones are now more muted and longer than they used to be.
- Phase 3 - at this point, the tones reach their maximum volume. Of all the phases, they are the loudest and sharpest.
- Phase 4 - the tones weaken again, becoming softer and less distinct.
- Phase 5 = **diastolic pressure**. The tones disappear completely.

From the above phases, we can deduce that when measuring blood pressure by the Korotkoff method, only phases 1 and 5 will be used and noted. However, this statement is not entirely correct. In phase 4, the tones may be so weakened that they can be confused with phase 5. This is especially true for measurements in people with hyperkinetic circulation and high minute volume (we can also hear tones that reach almost zero).

Instead of phase 5, the value of phase 4 diastolic blood pressure in pregnant women, children up to 13 years of age, when measuring blood pressure after dynamic exercise, in hitherto untreated thyrotoxicosis, in arteriovenous fistula and hemodynamically significant aortic insufficiency is recorded.

References

Related Articles

- Auscultation
- Blood pressure measurement / Catalog of methods in biophysics
- Blood pressure measurement
- Blood pressure
- Systolic pressure • Diastolic pressure

External links

- Great medical dictionary. Korotkoff's phenomenon [online]. [cit. 2019-01-04]. <<http://lekarske.slovniky.cz/lexikon-pojem/korotkovuv-fenomen-1>>.
- Propaedeutics. Blood pressure measurement methods [online]. [cit. 2019-01-04]. <<http://new.propedeutika.cz/?p=477>>.
- Blood pressure measurement [online]. [cit. 2019-01-04]. <<https://www.medicinapropraxi.cz/pdfs/med/2007/01/02.pdf>>.
- Hartmann. Auscultation method [online]. [cit. 2019-01-04]. <<https://www.tlakomery.cz/encyklopedie-krevniho-tlaku/auskultacni-metoda-0>>.

Links

- MAXDORF, S.R.O.,. *Velký lékařský slovník : Korotkovův fenomén* [online]. PhDr. Zdeňka Juránková, ©1998-

2019. The last revision 1998-2019, [cit. 2021-12-12]. <<http://lekarske.slovniky.cz/lexikon-pojem/korotkovuv-fenomen-1>>.

- AS.MUDR. PIŤHOVÁ, Pavlína. *Propedeutika : Metody měření krevního tlaku* [online]. MUDr. Ondřej Hloch, [cit. 2021-12-12]. <<http://new.propedeutika.cz/?p=477>>.
- DOC. MUDR.NĚMCOVÁ, CSC, Helena. *Přehledové články : Měření krevního tlaku* [online]. Interní Med. 2006; 9: 396-400., ©2006. The last revision 2007, [cit. 2021-12-12]. <<https://www.medicinapropraxi.cz/pdfs/med/2007/01/02.pdf>>.
- HARTMANN – RICO A.S.,. *Encyklopedie pojmů : Auskultační metoda* [online]. HARTMANN – RICO a.s., ©2019. The last revision 2019, [cit. 2021-12-12]. <<https://www.tlakomery.cz/encyklopedie-krevniho-tlaku/auskultacni-metoda-0>>.