

# CORRELATION OF THE KOROTKOFF'S SOUND WITH FIRST HEART SOUND

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**Abstract**— The turbulence of blood flow will cause the murmur or the bruit and not the sound. The co-relation of Korotkoff's sound with the first heart sound was studied with the above methods .After study and clinical co-relation bring me to the above conclusion that the Korotkoff's sound coincides with the first heart sound. Hence the origin of Korotkoff's sound is in the heart that is the closure of the mitral valve.

**Index Terms**— Sound, First heart sound, Korotkoff's sound, Wireless stethoscope.

## I. INTRODUCTION

The narrowing of the artery by the atherosclerotic disease or by the stricture of the artery or the external compression by tumor or mass will produce the murmurs or the bruit .The compression of the brachial by pressure in the B P cuff will have to produce the murmur or the bruit which are different from the sound heard during the recording of the BP ( Korotkoffs sound) .The fluids that are the blood or water are the best conductors of the sounds .Hence I tried to found out the origin of the Korotkoffs sounds by correlating it to the first heart sound (S1).

## II. METHODS USED ARE THE CLINICAL METHODS

- A. Correlated Korotkoff's sound with the carotid pulse
- B. Correlated Korotkoff's sound with the apex beat
- C. Correlated Korotkoff's sound with the mitral valve closure with the help of 2DECHO views

## III. PURPOSE OF STUDY

Sounds are produced by the closure of the heart valves and not in the artery by compression or narrowing.

## IV. OBSERVATION

- A. When I Correlated the Korotkoff's sound with the carotid pulse , it is found that the Korotkoff's sound very well correlates with the carotid artery pulse. In another word it occurs simultaneously with the carotid pulse.

- B. When I correlated the Korotkoffs sounds with the apex beat I found that the Korotkoff's sound very well correlates with the apex beat. In another words it occurs simultaneously with the apex beat.
- C. Lastly I tried to correlate the Korotkoff's sound with the closure of mitral valve on the 2D ECHO film . I observed that the Korotkoff's sound occurs simultaneously with the closure of mitral valve.

## V. CONCLUSION

1) With above clinical studies I came to the conclusion that the Korotkoff's sound coincides with the first heart sound that is due to the closure of the mitral valve.

2) This Korotkoff's sound is transmitted by the blood which is the best conductor of sound wave .The explanation that the resonant motion of the arterial wall given for the origin of the Korotkof's sound is less likely.

3) The turbulence of the blood flow will not produce sound (Korotkoff's) but it will definitely produce the murmur or the bruit.

4) This finding is totally based on the clinical observations and hence this needs confirmation with the wireless stethoscope. With the help of the wireless

5) Stethoscope, the simultaneous recording of the sound i.e. Korotkoff's sound and the first heart sound (s1) may confirm my observation.

## REFERENCES

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