HeFSSA
Heart Failure Society of South-Africa
Background

Special interest group affiliated to the South African Heart Association

First Heart Failure Society in Africa

Established as a non-profit Section 21 company in 2005

Mission: To promote education and research as well as collaboration on issues relating to heart failure in South Africa and around the world
Cardiologist in public and private sector

E Klug (President)
M Mpe (Vice-President)
D Smith (Treasurer)
J Hitzeroth (Secretary)
K Sliwa
P Obel
C Radulescu
S Lecour
T Lachman
Activities

Cardio Update for Non-cardiologists at The SA Heart Congress
Research and Specialist Education- HeFSSA/SASCAR
GP Program 2013
Website (www.hefssa.org)
Web-based Questionnaire
Patient Empowerment Program
Physicians and General Practitioner Update
Heart Failure Travel Scholarship
Inter-CHF Study
The GAPS Study
To continue to provide value to the SA Heart Association, colleagues, industry and to our patients. We also acknowledge our responsibility towards our sponsors and the communities in which we practice.
Corporate sponsors

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Medtronic
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Heart Failure Case Study
DIAGNOSIS:

1) Hypertensive cardiomypathy.

HISTORY AND EXAMINATION:


INVESTIGATIONS:

ECG: LVH (all criteria) + strain.
Chest x-ray: ↑ CTR 70%.
Echo: dilated. Dysfunction LV. EF: 18%. Mild concentric LVH. Mild MR and TR.
Bloods: see attached flow chart.

PROGRESS AND MANAGEMENT:

Failure resolving - on treatment.

FOLLOW UP: 1) Cardiac Clinic.

T.T.O:

1) Digoxin 0.125 mg po daily.
2) Slow K I I I tabs tds po.
3) Coversyl 4 mg po daily.
4) Hoescht Lasix 125 mg po mane and
5) 80 mg noon.
6)
7)
8)

DATE: 10.5.99 COPY TO: Cardiac Clinic.
Presentation of HF - REF

- Effort intolerance
- Fluid retention
- JVP, hepatomegaly, pedal oedema
- Displaced LV apex beat
- Left sided third sound
- No lung crackles

**DIAGNOSIS:**

1) Hypertensive cardiomyopathy.

**HISTORY AND EXAMINATION:**

Referred by [redacted] with SOB and effort tolerance and leg swelling. Denies alcohol abuse. **Occupational history:** worked as Supervisor in Cast Iron Foundry. **On Examination:** afebrile. BP 150/110. JVP 7 cm. Pedal oedema ++. **CVS:** apex myopathic 6 ICS outside MCL. S1 S2 S3. **Chest:** clear. No creps. **Abd:** 6 cm hepar.

**INVESTIGATIONS:**
Hypertensive Retinopathy

- Exudates and hemorrhages: 2.80%
- Papilledema: 0.62%
- Arteriovenous nicking: 30.53%
- Arteriolar narrowing: 32.09%
- Normal: 33.96%
1999, 36 years old

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DATE: 10/5/99

COPY TO: Cardiac Clinic.
Resting ECG
Simplified Criteria for Diagnosing LVH

1. Deepest S wave in lead V1 or V2, plus tallest R wave in lead V5 or V6 ≥ 35.
   — and/or — R in lead aVL ≥ 12.
2. Patient ≥ 35 years old.
3. Left ventricular (LV) "strain".
Progressive QRS widening

CLASSICAL: LVH voltage with typical repol. abnormalities (“strain”)
LVH voltage with typical repolarization abnormalities and QRS widening
Incomplete LBBB (absent septal Q in leads I and V6)
Complete LBBB
T wave inversion

“Strain”

Ischemia
Presenting CXR
The heart and vascular structures of the CXR
• 3.6.5 Chest X-ray

• A chest X-ray is of limited use in the diagnostic work-up of patients with suspected HF.

• It is probably most useful in identifying an alternative, pulmonary explanation for a patient’s symptoms and signs.

• It may, however, show pulmonary venous congestion or oedema in a patient with HF.

• It is important to note that significant LV systolic dysfunction may be present without cardiomegaly on the chest X-ray.
Echo-cardiography - parasternal long axis

19mm

19mm
Short axis

Normal

LVH hypertension
Survival Implications of ECG or Echo LVH

- ECHO
- ECG

Graphs showing cumulative survival over follow-up years, comparing No LVH, echo-LVH, and SL-LVH.
Suspected heart failure

Acute onset
- ECG
- Chest x-ray

Non-acute onset
- ECG
- Possibly chest x-ray

BNP/NT-pro BNP
- ECG normal and NT-proBNP <300 pg/mL or BNP <100 pg/mL → Heart failure unlikely
- ECG abnormal or NT-proBNP ≥300 pg/mL or BNP ≥100 pg/mL

BNP/NT-pro BNP
- ECG abnormal or NT-proBNP ≥125 pg/mL or BNP ≥35 pg/mL
- ECG normal and NT-proBNP <125 pg/mL or BNP <35 pg/mL → Heart failure unlikely

If heart failure confirmed, determine aetiology and start appropriate treatment
DIAGNOSIS:

1) Hypertensive cardiomyopathy.

HISTORY AND EXAMINATION:

Referred by G.P. with SOB and ↓ effort tolerance and leg swelling. Denies alcohol abuse. **Occupational history:** worked as Supervisor in Cast Iron Foundry. **On Examination:** apyrexial. BP 50/110. ↑ JVP 7 cm. Pedal oedema ++++. **CVS:** apex myopathic 6 ICS outside MCL. S1 S2 S3. **Chest:** clear. No creps. **Abd:** 6 cm hepap.

INVESTIGATIONS:

**ECG:** LVH (all criteria) + strain.

**Chest x-ray:** ↑ CTR 70%.

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4) Hoescht Lasix 125 mg po mane and 60 mg noon.
5) 80 mg noon.
6)
Actual script on discharge - 1999

Gauteng Department of Health Services
Johannesburg Hospital Private Bag X39
Johannesburg
PR. NO. 5601398
Tels.: 488-4911

Details of prescription

(T.T.O.)

Digosine 0.125g PO daily
Cavergan 100 mg daily
Hofeklaser 125g PO morning

Date: 3/5/99

Signature of Pharmacist

Discharge Summary

This form must in all cases be completed immediately on discharge of a patient and signed by a doctor with rank not lower than Clinical Assistant (Registrar).

Unit from which discharged: 595

Chief of Unit: [Redacted]

Discharge Date: 3/5/99

Discharge Time: 12:00

Final Diagnosis - List primary first

4F HOT CMO
E.E. 18.9.92
Effect of digoxin

The diagram illustrates the effect of digoxin on the heart. It shows the interaction between calcium ($Ca^{++}$) and sodium ($Na^+$) ions, regulated by the Na+/Ca++ exchanger and Na+/K+ ATPase. Digoxin inhibits the Na+/K+ ATPase, which leads to an increase in calcium levels ($Ca^{++}$) and sodium levels ($Na^+$). This increase in calcium binding with TN-C results in an increase in inotropy (force of contraction). The diagram also shows an increase in potassium ($K^+$) levels, which is a common side effect of digoxin treatment.
Digoxin effect on ECG

- The bowl-like down-sloped ST segment depression is characteristic for the digitalis effect - "reverse tick"
• Developed angioneurotic oedema on enalapril

• In public health system received telmisartan, then losartan as replacement.
• Hydrochlorthiazide 12.5 mg
• Losartan 100 mg daily
• Carvedilol 25 mg bd
• Amlodipine 10 mg daily
Reversal of LVH

LIFE Echo: Left Ventricular Hypertrophy (LVH) Prevalence at Baseline and Annual Follow-Up

LVH prevalence (%)

Yr 0 | Yr 1 | Yr 2 | Yr 3 | Yr 4 | Yr 5
---|---|---|---|---|---
70 | 40 | 30 | 30 | 30 | 20

LVH reversed in 2/3 of patients with LVH at baseline
### Clinic Echo results 1999 - 2012
### LVIDDD - 59.9 mm reduced to 46 mm

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Lessons

• Basic investigations still of benefit

• LVH and LV dilatation are reversible with appropriate therapy

• Recognise adverse drug events and replace offending agent appropriately

• Reduce diuretic therapies as the patient's heart failure improves

• In difficult to control hypertension and heart failure, use appropriate medications