

INTRODUCTION/AIMS

Mydricaine No 2 is used during some VR surgery and also commonly in uveitis to break posterior synechiae when topical dilation therapy has failed.

Systemic cardiac side effects are known to occur and published case reports remain the primary method of communication as Mydricaine No 2 does not appear in the BNF.

By presenting this case we aim to provide Eye Professionals with further useful information to guide practice of when more cautious use of Mydricaine No 2 or alternative options should be considered.

CASE REPORT

70 M - LE iritis with posterior synechiae (PS)
PMHx – recurrent LE iritis, ankylosing spondylitis, stable CLL, percutaneous coronary intervention 2009, angina

Examination – RE 6/7.5, LE 6/24, LE irregular pupil with slow reaction. LE <0.5mm hypopyon with PS.

Management – 3 rounds of 2.5% phenylepinephrine and 1% cyclopentolate. Followed by subconjunctival injection of 0.3ml Mydricaine No 2.

Shortly after developed tachycardia, central chest pain radiating down the left arm and diaphoresis.

ECG showed no ischaemic changes – Figure 1. Troponin 27-80 ng/L (normal <14 ng/L).

Admitted to Cardiology. Cardiac catheterisation showed coronary artery dissection. 2x stents inserted. Discharged following day on dual antiplatelet therapy.

MYDRICAINE NO 2

Figure 2 shows the 0.5ml vial but 0.3ml contains:

- Atropine sulphate 1mg
- Adrenaline acid tartarate 120mcg
- Procaine hydrochloride 6mg

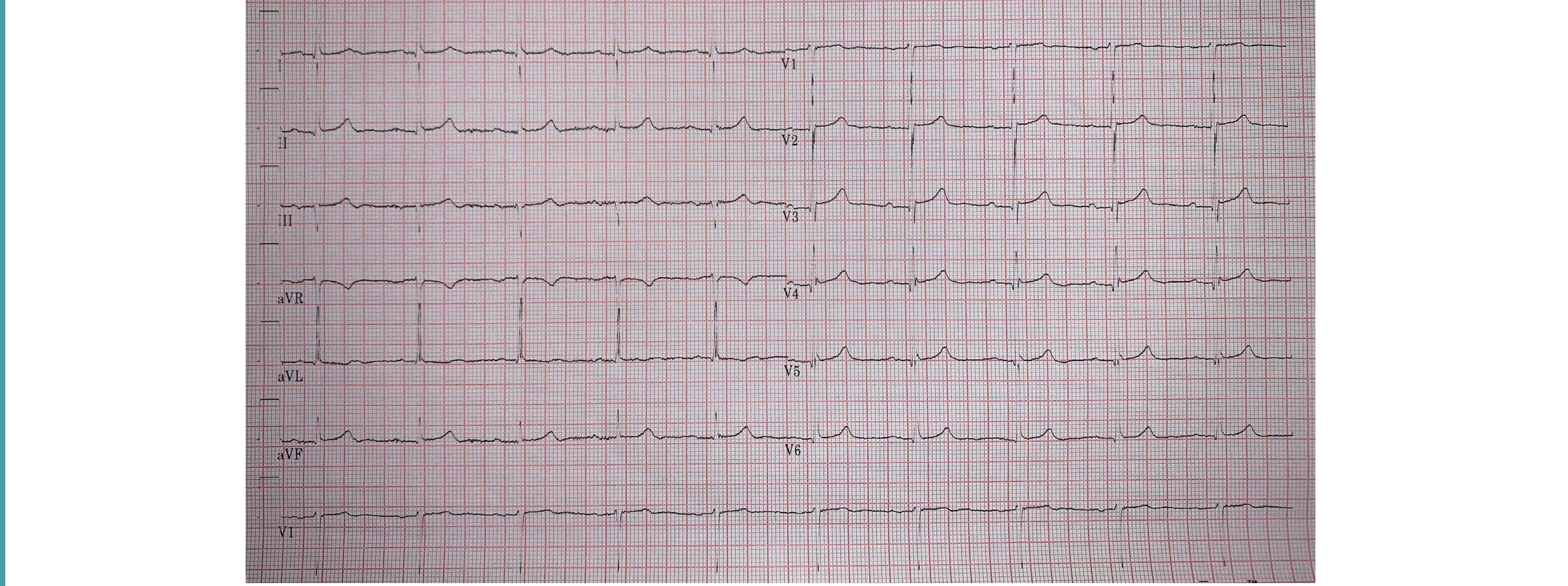


Figure 1. Electrocardiogram (ECG) showing no ischaemic changes

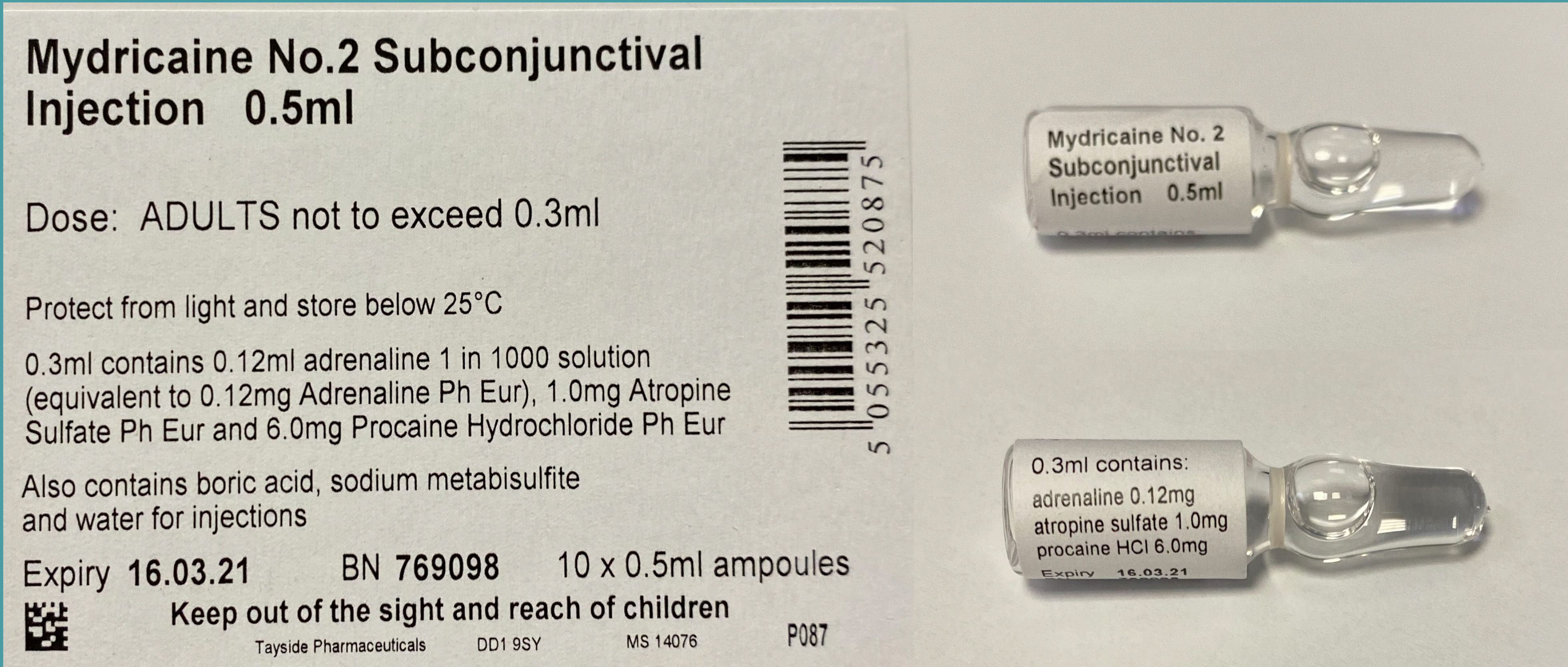


Figure 2. Mydricaine No 2 packaging and glass vial

| Year | Cardiac Effect | Age/Sex | Previous Cardiac Hx |
|------|---|---------|--------------------------|
| 1994 | ST Elevation Myocardial Infarction (STEMI) ¹ | 78 F | 3x myocardial infarction |
| 2001 | Supraventricular ectopics and SVT ² | 76 M | Nil |
| 2005 | Myocardial ischaemia ³ | 72 F | Nil |
| 2006 | Atrial fibrillation ⁴ | 77 F | Hypertension, diabetes |
| 2016 | Takotsubo cardiomyopathy ⁵ | 45 F | Nil |

Figure 3. Case reports of cardiac side effects following Mydricaine No 2

LITERATURE/DISCUSSION

Cardiac effects of Mydricaine No 2 are well published. A vascular conjunctiva enhancing systemic absorption in combination with atropine and adrenaline can lead to tachycardia and vessel vasoconstriction.

Myocardial ischaemia and arrhythmia are the two stems of cardiac side effects. Figure 3 lists the published case reports of cardiac side effects following injection of Mydricaine No 2. Interestingly, in over half of case reports the individuals did not have preceding cardiac disease. Sinus tachycardia has also been described in other published research post-injection however arrhythmia and ischaemia are more concerning effects.

CHANGE IN PRACTICE

This case lead to change of regional uveitis guidance. Extreme caution is recommended when considering administering Mydricaine No 2 to patients with risk factors for or with known cardiac disease. Caution should also take place in the elderly or in cases where bilateral injections are necessary. The importance of acknowledging cardiac side effects when consenting for this injection has also been highlighted to staff working in Ophthalmology.

REFERENCES

- 1 - Pandit J. Tachycardia and myocardial ischaemia following subconjunctival injection of Mydricaine No. 2. *Eye (Lond)* 1994; **8**: 599.
- 2 - Williams G. Supraventricular ectopic and supraventricular tachycardia following injection of subconjunctival Mydricaine No 2. *Eye* 2001; **15**: 542-4.
- 3 - Keembiyage R, Simpson H, Lai C. Tachycardia and myocardial ischaemia following subconjunctival injection of mydricaine (number 02) for vitrectomy procedure. *Clin Experiment Ophthalmol* 2005; **33**: 105-6.
- 4 - Keembiyage R, Raymond G, Newland H. Atrial fibrillation following subconjunctival injection of mydricaine no 2. *Clin Experiment Ophthalmol* 2006; **34**: 806-8.
- 5 - Rasiah S, Finger R, MacIsaac A, Lim L. Takotsubo syndrome caused by subconjunctival injection of a mydricaine analogue. *Clin Experiment Ophthalmol* 2016; **44**: 624-5.