Wide QRS tachycardia in 24-hour Holter monitoring – the eternal dilemma: a case report

Magdalena Drljačić[1]*,
Ivica Benko[1,2],
Ivona Filipović[1],
Ivana Šmuc[1],
Mateja Lovrić[1],
Marina Žanić[1],
Nikolina Slamek[1],
Mirela Adamović[1],
Senka Pejković[1]

[1]Dubrava University Hospital, Zagreb, Croatia
[2]University of Applied Health Sciences, Zagreb, Croatia

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***ADDRESS FOR CORRESPONDENCE:** Magdalena Drljačić, Klinička bolnica Dubrava, Avenija Gojka Šuška 6, HR-10000 Zagreb, Croatia. / Phone: +385-1-2902-545 / E-mail: magdalena.drljacic@gmail.com

ORCID: Magdalena Drljačić, https://orcid.org/0009-0004-8530-9230 • Ivica Benko, https://orcid.org/0000-0002-1878-0880
Ivona Filipović, https://orcid.org/0009-0000-7291-6219 • Ivana Šmuc, https://orcid.org/0009-0000-2735-507X
Mateja Lovrić, https://orcid.org/0000-0003-1457-6521 • Marina Žanić, https://orcid.org/0000-0001-5123-8586
Nikolina Slamek, https://orcid.org/0000-0002-2975-8793 • Mirela Adamović, https://orcid.org/0000-0003-4922-7436
Senka Pejković, https://orcid.org/0000-0002-7557-9358

Introduction: Wide QRS tachycardia represents one of the most challenging findings in cardiology, as it can correspond to several underlying mechanisms: ventricular tachycardia (VT), supraventricular tachycardia (SVT) with aberrant conduction, pre-excitation syndromes, or drug/electrolyte-induced conduction disturbances. Since inappropriate classification may result in delayed or inadequate treatment, the general rule in doubtful cases is to treat the arrhythmia as VT until proven otherwise[1-3].

Case report: 75-year-old female with a history of hypertrophic cardiomyopathy, Wolf-Parkinson-White syndrome, and type 2 diabetes was admitted following a 24-hour Holter ECG that revealed multiple sustained wide QRS tachycardias, symptomatic with weakness and dizziness, but without syncope. The Holter recorded sinus rhythm as the baseline, with 11,811 ventricular and 1,228 supraventricular extrasystoles. During symptomatic episodes, wide QRS tachycardia was documented, but it was unclear whether the mechanism was ventricular or supraventricular with aberrancy. The patient was referred for urgent hospitalization, and after diagnostic work-up including echocardiography and laboratory tests, she underwent an electrophysiological study. A sustained clinical tachycardia was induced, consistent with orthodromic AV reentrant tachycardia via a left lateral accessory pathway. Radiofrequency ablation was performed successfully with subsequent loss of conduction through the pathway. Post-ablation, tachycardia was no longer inducible and telemetry remained stable throughout hospitalization.

Conclusion. This case emphasizes the complexity of interpreting wide QRS tachycardias in Holter analysis and the need to approach uncertain cases as potential VT. It also highlights the importance of comprehensive clinical education of nurses involved in Holter monitoring, extending beyond ECG curve recognition to an integrated understanding of arrhythmia mechanisms, clinical context, and patient safety.

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