Amiodarone plays a pivotal role in the treatment of ventricular and supraventricular arrhythmias. However, amiodarone-induced hyperthyroidism (AIH) is one of the most feared complications, which necessitates interdisciplinary treatment and careful balancing of the risks of conservative treatment against those of total thyroidectomy. In this article we discuss the pharmacological aspects of amiodarone and its diverse effects on the thyroid. Furthermore, we present diagnostic and therapeutic strategies and report our positive experiences with total thyroidectomy in patients with AIH. Particularly in patients for whom continuation of amiodarone treatment is compulsory, a well-timed total thyroidectomy is a reliable therapeutic option, with minimal complication rates and immediate amelioration of symptoms.