Amadeus's domains without difficulty, and he would become a fugitive, perhaps permanently dispossessed of his lands. But although he faced overwhelming odds, he still held a few cards. A relief army of Habsburg troops, paid for by his English and Dutch allies, and commanded by his cousin Prince Eugene of Savoy, was preparing to march through Lombardy to aid him. Turin itself would not be an easy nut to crack: its fortifications were extremely strong, it was well supplied with cannon, well provisioned, and well garrisoned. This time too the population was determined to resist, knowing the fate that awaited them if the city fell: in contrast to the previous war, there was little evasion of duty in the citizen militia, and citizen morale did not break under the intense bombardment unleashed by the besiegers.

The French commanders initially threw a cordon around Turin, but concentrated most of their men and guns on its western side, with the aim of reducing the citadel, for once it fell, the rest of the city would be bound to fall too. For a time, communication with the outside world was still possible, though dangerous. Cattle and sheep could still be driven into the city and herded into the piazzas, where they were kept as provisions on the hoof for the duration of the siege. But by the middle of June the city was totally encircled, and subject to constant bombardment. Victor Amadeus had been directing the defense until then, but he now departed the city with a contingent of cavalry, to harass the enemy's communications. He left an Austrian general, Marshal Daun, in command of the garrison, with instructions to coordinate the defense of the city with the syndics and the council, who remained at their posts. The ducal family departed, seeking refuge in the neutral city of Genoa, carrying the crown jewels and the Holy Shroud with them. By now the besiegers had advanced their trenches close to the citadel, and their artillery was systematically battering its walls to open a breach. The opposing armies were also fighting underground, in the maze of tunnels and counter-mines that radiated out from the citadel. French soldiers fought to penetrate the tunnels and gain access to the citadel, to be met in hand-to-hand combat by the defenders. In one of these subterranean battles a courageous Piedmontese soldier named Pietro Micca detonated a mine to block a tunnel against a party of French grenadiers, sacrificing himself and entombing the attackers. His heroism was not fully recognized or rewarded at the time, but in the nineteenth century he would be hailed as a patriotic icon, the incarnation of the "warrior spirit" that inspired the Piedmontese monarchy to lead the unification of Italy.

At the end of August the relieving army under Prince Eugene reached