abstract We report on RXTE observations of the microquasar XTE J1550–564 during a ∼ 70 day outburst in April-June 2000. We present the PCA+HEXTE 3–200 keV energy spectra of the source, and study their evolution over the outburst. The spectra indicate that the source transited from an initial Low Hard State (LS), to an Intermediate State (IS) characterized by a ∼ 1 Crab maximum in the 1.5–12 keV band, and then back to the LS. The source shows a hysteresis effect such that the second transition occurs at a 2–200 keV flux that is half of the flux at the first transition. This behavior is similar to what observed in other sources and favors a common origin for the state transitions in soft X-ray transients. In addition, the first transition occurs at a ∼ constant 2–200 keV flux, which probably indicates a change in the relative importance of the emitting media, whereas the second transition occurs during a time when the flux gradually decreases, which probably indicates that it is driven by a drop in the mass accretion rate. In both LS, the spectra are characterized by the presence of a strong power-law tail (Compton corona) with a variable high energy cut-off. During the IS, the spectra show the presence of a ∼ 0.8 keV thermal component which we attribute to an optically thick accretion disk. The inner disk radius as inferred from disk-blackbody fits to the energy spectrum remains relatively constant throughout the IS. This suggests that the disk may be close to its last stable orbit during this period. We discuss the apparently independent evolution of the two media, and show that right after the X-ray maximum on MJD 51662, the decrease of the source luminosity is due to a decrease of the power-law luminosity, at a constant disk luminosity. The detection of radio emission, with a spectrum typical of optically thin synchrotron emission, soon after the X-ray peak, and the sudden decrease of the power law luminosity at the same time may suggest that the corona is ejected and further detected as a discrete radio ejection.